

The **ENTREPRENEUR'S** Guidebook Series™

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PERSONAL PLANNING

Guidebook #58:

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Design Concept: Sexy Photos Sell **BIG \$\$**



“Harry, you better not be up to no good in there!”

Smallbusinessstown.com

CREATING “EYE CATCHING” GRAPHICS

IT is not uncommon for an advertising agency to spend over \$10,000 for the production of one photograph to be used as the main visual for an ad.

Although this may seem like an inordinate amount of money to someone not familiar with the advertising business, when you consider that a further \$100,000 can easily be spent securing national advertising, this initial amount isn't much.

However, if you don't have \$10,000, let alone \$100,000, and you still want to create an interesting visual for a local flyer or newsletter, you are pretty much out of luck.

Unless . . . you master a few tricks of the trade yourself.

TAKING YOUR OWN PHOTOS

TAKING YOUR own photos will allow you to indulge your creative instincts and in the process learn what makes a good photo work. This skill will also enable you to make more intelligent ad design decisions. You should also consider taking your own photos for the following three reasons:

1. Professional photographers are expensive and put you at the mercy of their schedule not yours.
2. So called free lance photographers are typically not much better than you except they have better equipment.

A beautiful photograph in an art book is worth at least a thousand words. But in an advertising piece, if a beautiful photograph doesn't sell, it's worth exactly one word. "NEXT!"
FUNQUOTE

3. When starting out, you may have time to kill, but not money.

NOTE In Guidebook #62, you will find 21 kinds photos and visuals you can use to complement the content of your ads. In this guidebook, however, you will learn more specifically, how to create your own photos and visuals from scratch.

Selecting the Proper Equipment

The major prerequisite for taking a decent business photo is decent equipment, not an uncanny eye for detail or beauty. For starters, you will need:

- a camera
- a hand held exposure meter

- an assortment of lenses
- assorted lighting equipment
- slave trigger units
- a long distance triggering mechanism
- a rock solid tripod

Camera – Purchase a Canon, Olympus or Pentax 35mm workhorse, with automatic focus. These brand name cameras and ones similar in price and quality offer you the range you need. Also, consider purchasing a good quality Polaroid camera. Polaroid cameras can give you instant pictures, making them very handy for research purposes (e.g., spying on the competition, analyzing locations and surveying customers), recording

inventory and capital acquisitions, experimenting with photo composition before taking final pictures, and helping express your design ideas to a real photographer. And besides that, their fun.

All professional photographers use a hand held exposure meter to take more precise measurements on incident light – the light falling on the subject – to create the exact effect they want.

Exposure Meter – Although most cameras have exposure meters built in, these meters are limited in their use. They measure only the reflected light off the brightest part of the photo being taken. All professional photographers thus use a handheld exposure meter to take more precise measurements on incident light – the light falling on the subject – to create the exact effect they want. This kind of meter has a translucent plastic dome or disk to diffuse the light before it reaches a light-sensitive metering cell, thereby producing a miniat-

turized version of what is called “18 percent gray” for the cells examination. To meter accurately in this mode, you need to stand in front of the camera and point the meter back at the lens.

NOTE Many handheld meters are designed to take both incident and reflected light readings. However, in this case two separate light-sensitive cells are required.

Lenses – For commercial photography, it is paramount that you have a high quality macro and wide angle lens for close-ups and pictures of buildings. For fashion photography however, you will also need a telephoto lens – minimum is 85mm although 180mm is preferred.

For commercial photography, it is paramount that you have a high quality macro and wide angle lens for close-ups and pictures of buildings.

Many fashion photographers prefer using a telephoto lense for the following reason: the greater the focal length of the lens, the greater the compression of the image. This compression effect removes perspective and flattens the subject. It prevents a model’s arms and legs from appearing out of proportion when she walks towards the camera. It also concentrates more image into the frame and as a result draws more attention to the fashion. Another strength of the telephoto lens lies in its ability to control space. To frame a picture properly, you won’t have to move back and forth.

Fisheye Lens – A lens with extreme angle of coverage varying from about 120 to 180 degrees.

Macro Lens – General term for a lens designed for close-up photography but also capable of good results at unit magnification (lifesize).

Macro-Zoom Lens – A type of zoom or varifocal lens that offers an additional feature of a close-focus capability but almost never approaching same-size imagery that would truly qualify it for the Macro title.

Telephoto Lens – A long focus lens. A super telephoto lens has a focal length from 200 to 800 mm.

Zoom Lens – A lens that can vary its focal length. Zoom ratios of 2:1 to 6:1 are available for 35-mm still photography.

NOTE If you can only afford one lens,

***Barn Doors** – Opaque flaps attached to the edges of a light and used to control light spread, for shading effects in the set, and to keep flare-causing light from entering the camera.*

purchase a 28 mm to 100 mm macro zoom lens. The 28 mm allows you to take scenery pictures, the 100 mm telephoto can

give you enough compression to flatten images as well as the capacity to move in very close, and the macro allows you to take close-ups of objects.

Lighting Equipment – Basic lighting equipment includes two 1400-watt power packs with three strobe heads; one wide-angle reflector; one narrow reflector; one pair of barn doors; and a snoot. You also may need: a strobe soft-light; one silver umbrella; and six white foam core reflector pads.

Barn Doors – Opaque flaps attached to the edges of a light and used to control light

spread, for shading effects on the set, and to keep flare-causing light from entering the camera. Two, with one on each side, or four with additional top and bottom flaps, are typically used. The flaps are hinged and blackened so the light spread can be continuously restricted.

Snoot – A tube fitted over a light source to concentrate light on a small area. Snoots for studio lights are usually made of metal to withstand heat and are straight or cone-shaped with light openings of various sizes. A flexible, folding snoot can be used on the head of an on-camera electronic flash unit.

Slave Trigger Units – In order to sync your lighting equipment, you will need an accessory slave trigger unit that can be

When shooting with slow speed film or at night, you will need a tripod.

plugged into the synchronizing lead of a flashgun. A slave unit then reacts to light from another flash usually your camera, and instantaneously fires in full synchronization.

Triggering Mechanism – An extension triggering mechanism allows you to observe as many factors as possible while you are taking a photo to make sure that all the lightening equipment has functioned properly and the desired effect achieved. It also prevents accidental jarring of the camera and distortion of the image caused by the pressure of the finger on the camera button.

Tripod – When shooting with slow speed film or at night, you will need a tripod. Tripods are also good for getting exactly the

same shot at different exposures. This is particularly important when shooting products by themselves for packaging covers or PR media kits.

Choosing the Right Kind of Film

All photographers would like to have the use of an ultra-fast, ultra-sharp, ultra-vivid film, preferably one that would also counteract underexposure and overexposure without complaint. However, this is scientifically impossible. Film producers instead, offer an extensive variety of films to keep the professionals as well as the rest of the world’s film users happy.

All photographers would like to have the use of an ultra-fast, ultra-sharp, ultra-vivid film, preferably one that would also counteract underexposure and overexposure without complaint. However, this is scientifically impossible.

This means that when choosing a film for a certain project, you will need to first perform a bit of juggling. You will need to balance between film speed, grain, sharpness, color, and latitude. For example, if you want more speed, your sharpness and color are likely to suffer. And if you go for fine grain and greater clarity, the film’s sensitivity to light will decline.

ISO/ASA Film Speed Standards

– The film speed number was originally intended to measure the fundamental sensitivity of a negative or positive semi-

transparent photographic material as set out by ASA (American Standards Association). Now, it is an index value on a scale for use by photographers in determining

the camera settings that will yield a satisfactory image as set out by the ISO (International Standards Organization).

ISO standards take into consideration the color and intensity of the light on the subject, the subject itself, the type of light meter, and the method of use, the film processing, the printing technique and the criteria of image quality. However, for all intensive purposes 100 ASA speed film equals 100 ISO speed film. The two are now used interchangeably.

NOTE The film speed is marked on the film box and on the cassette.

Many newer cameras set the speed automatically when the cassette is inserted. Other models have a film speed dial that must be set manually to match the speed

The larger the ISO/ASA rating the greater sensitivity to light and hence faster exposure times, however you also lose sharpness.

of the film loaded.

Selecting the Right Film Speed –

Normally film speeds are selected between an ISO/ASA of 120 or 400. The larger the ISO/ASA rating the greater sensitivity to light and hence faster exposure times, however you also lose sharpness. ISO rated 400-speed film should be used for outside shoots on a sunny day while ISO rated 120-speed film is for inside use with a flash.

Using Pro Film – Regular films are usually shipped green with the idea they will peak just when you take your picture. However, professionals need to get things right without variation. They need film with consistency of coloration and an accurately rated film speed. To

meet their needs, film companies make a professional quality film costing about 25 percent more than the regular emulsion. Unlike regular films, professional films are shipped at their peak and are kept refrigerated to inhibit naturally occurring changes in the color balance of the emulsion. They should be used the same day that you take them out of the refrigerator and ideally processed within twenty-four hours.

NOTE Fuji and Kodak professional films are the choice of the professionals.

Using Print Film – Print film is for tourists. Film producers compromise on sharpness and grain in an effort to maximize film speed, and provide a good cushion for exposure errors.

Fuji and Kodak professional films are the choice of the professionals.

Using Kodak’s Gold Film – Kodak Gold is a general all round purpose film that comes in ISO/ASA speeds of 100, 200, 400 and 1600. 100 ISO/ASA provides the sharpest grain and best coloration. 1600 ISO/ASA is for taking pictures at night.

Using Kodak’s Ectar 25 Film –

Ectar 25 is a high quality color-negative film balanced for optimum grain, sharpness and color. Its ability to create incredibly sharp enlargements is offset by its slow speed and whisker-thin exposure latitude. Because of this, Kodak recommends that it be used only in a single-lens reflex camera, not in point and shoot camera. When using this film you will need a tripod – Ectar increases “camera shake.”

NOTE Most of the photographers who ex-

hibit color prints in museums and galleries use Ectar 25.

Using Fuji’s Reala 100 Film – This film is for making high quality colorprints and hopes to give Kodak’s Ektar Films a run for the premium film buyers dollar. *Reala* is said by Fuji to be the first film to reproduce colors as they are seen by the human eye. They do this by adding an extra blue-green layer that is said to control excess reds in a manner that mimics human physiology.

“Reala” is said by Fuji to be the first film to reproduce colors as they are seen by the human eye.

Using Kodak’s Ectar 1000 Film – This is the first 1000-speed film that manages to retain color in the shadow areas of the print. Its grain seems less noticeable than that of other 1000-speed film

although it remains obvious even in snapshot size.

Using Kodak’s Kodachrome Slide Film – Kodachrome 25 Slide Film is beloved by meticulous pros while Ko-

dachrome 64 is popular as a slightly speedier alternative. Those who like their reds redder than red use nothing but Kodachrome. Kodachrome’s are also remarkably resistant to fading.

NOTE You have to send away to get Kodachrome developed.

Using Ektachrome Film – For photo hobbyists who want to develop their own color films, Ektachromes can be processed by almost anyone. Consequently color slide processing equipment stores have sprung up in practically every town

and city, and professional photographers can process their own exposed films and deliver them to their clients in under two hours. Ektachrome 100 HC and Fuji’s Fujichrome 100 are both good all purpose slide film. However, 100 Speed Pro Ektachrome is the professional’s first choice.

NOTE A frequent problem associated with Ektachromes is a bluish haze. This can be corrected by using a light-yellow filter.

Getting Correct Exposures

No matter how simple or sophisticated, virtually all exposure meters see the world as a dreary blanket of gray. In technical terms, this means that they see what is called 18 percent gray. Eighteen percent gray represents the mean (or average)

light reflectance of an “average real-life scene” as determined by Kodak and other trustworthy authorities on the subject. Reality, however, is not so monochromatic and monotonous, as meters would like it to be. This is where exposure mistakes creep

in. For example, if the overall scene in front of your lens is either darker or lighter than the average shade the camera’s meter presumes, slavishly following its idea of correct exposure will invariably give you either an overexposed or underexposed picture.

Getting correct exposure is achieved using cold hard science and experience, not artistic instincts.

Four Methods for Getting the Correct Exposure – Getting correct exposure is achieved using cold hard science and experience, not artistic instincts. Technically speaking, this means allowing the exact right amount of light to affect the

film’s emulsion, so that after processing the whole range of image tone values – from important dark shadows to important bright highlights – is recorded (over and under exposure effects are achieved in the dark room, not in the field).

Practically speaking, this means learning how to use your camera’s light meter, often in conjunction with a handheld meter, to come up with the right setting of lens “f” stop number (light intensity) and shutter speed (time) to suit the particular subject conditions and ISO/ASA rating of the film.

There are four basic ways of doing this:

- taking a reflected light reading
- taking an incident light reading

- taking an average of shadow and highlight readings
- taking a reading using a Kodak Gray Card

Reading Reflected Light – Point your camera or light meter towards the subject and measure the reflected light off the subject. Make sure you pick the right spot from which to take your reading, being that light reflects more or less intensely off different colors and surfaces. This requires the skill of looking for the mid-tone value of the subject. This mid-tone is usually the 0.7 density in the center of a Kodak Gray Scale (18% gray). If you take a spot reading from an area in your picture which is equivalent to this mid-tone value, and use it to base your exposure on, you

This requires the skill of looking for the mid-tone value of the subject.

will produce the same range of tones shown on the gray scale providing the fullest tonal range for reproduction.

NOTE To learn what 18% gray look like, Kodak and others have obliged by selling what are called gray cards, which have been printed the exact shade a meter expects to see (use of gray cards are discussed further later on). Incidentally, 18% gray (composed of 18% black and 82% white) is also a good shade to have on your living room wall, especially if you like to display framed photographs there.

Reading Incident Light – Hold your handheld meter in front of the subject and point it back towards the camera to read the average amount of light falling

To learn what 18% gray look like, Kodak and others have obliged by selling what are called gray cards which have been printed the exact shade a meter expects to see.

onto the subject. Since the amount of incident light is independent of the tones of the subject, it accurately represents the average amount of light in the scene.

However, before setting your final exposure take into account that this method does not allow for the brightness range or reflectance from the subject itself. It does not take into consideration for example that yellow reflects more light than blue and that a shiny surface is twice as reflective as a matte surface.

In other words, when a subject is made up entirely of light tones or dark tones, the incident light reading cannot compensate for an imbalance of tones, and may cause you either to overexpose or

underexpose (remember, incident exposure meters see everything as 18 percent gray). In this case, it is important to compare both incident and reflected light readings or make adjustments for very dark subjects (less exposure) and very bright subjects (more exposure).

NOTE Camera exposure meters only measure reflected light whereas handheld meters can generally be used to take both reflected and incident light readings.

Averaging Shadow and Highlight Readings – Taking a light reading from the shaded areas of a main subject gives good shadow detail but leads to over-exposure of the more brightly lit areas. However, exposing for the brightly-lit

areas causes loss of detail in the shaded areas of the face and hair. Therefore, the best solution is to take an average of the shadow and highlight readings to give you good mid-tone detail and acceptable coverage of both shadow and high areas of the scene.

Using a Kodak Gray Card Reading For Getting the Right Exposure – If you don’t mind carrying an 8-by 10 inch piece of gray cardboard with you at all times, and if you have the patience to actually use it, a Kodak Gray Card is an inexpensive, immensely helpful aid for determining precise exposure as well as helping to train your eye to recognize the 18% gray or .70 density tone in scenes, talked about earlier.

Camera exposure meters only measure reflected light whereas handheld meters can generally be used to take both reflected and incident light readings.

A Gray Card can be used this way: Once you’ve selected what you want to shoot, simply put the gray card in front of the lens and in the same light as your subject, and take a meter reading from its surface. Since the gray card reflects the amount of light that the meter assumes is average (18% gray), the exposure will be right on the button.

In extremely dark or light scenes place the gray card in an area which receives the same amount of light as that falling onto the overall subject.

If the scene you are photographing covers a large area, hold the card up in front of you and visually compare the mid-tone you have selected with

the tone of the gray card.

After taking your measurements, judge whether the subject is predominantly lighter or darker than 18 percent gray. Then if it is lighter – say, a sandy beach or a snow covered lane – additional exposure is in order. But, if it is darker – like a black cat in a coal bin – then less exposure is needed.

Five Strategies for Getting Better Exposures – To refine your method for getting the right exposure, use the following 5 strategies.

Overexpose rather than underexpose. Print quality diminishes quickly with one stop underexposed but still looks good up to three stops overexposed. Therefore, when choosing your set-

Once you’ve selected what you want to shoot, simply put the gray card in front of the lens and in the same light as your subject, and take a meter reading from its surface.

tings, keep in mind that it is better to be overexposed than underexposed.

No picture should contain an object with an exposure rating of greater than five stops between its brightest and darkest spot. To get a picture of a subject that neither looks over exposed or under exposed, using black and white film, no object should not have an exposure rating of greater than five stops between its brightest and darkest spot; color negative film should not exceed four f-stops; and color print film, which has even less latitude, should not exceed three f-stops.

NOTE A correctly exposed color transparency, when viewed on a light box rated at 5500 degree K should not require any lightening or darkening to reveal all its the

Print quality diminishes quickly with one stop underexposed but still looks good up to three stops overexposed.

details. This is the standard in commercial photography of achieving successful reproduction.

Take multiple shots at different exposures. If you're not sure, which exposure setting is correct, take several shots at different settings and then pick the best one.

Watch out for backlit areas in your photo. In certain situations, such as those that are backlit, reflected light meters can be fooled. Some cameras have backlight buttons to compensate for this situation, while others have sophisticated multi-area metering systems that take back-lighting into account.

Create contrast through color not exposure. For maximum color saturation, light-

ing should be kept to within a contrast ratio of two f-stops. Create contrast instead through the use of color.

Utilizing Basic Lighting Techniques

All lighting fits into a scale ranging from beautiful soft, diffused light streaming through a window, to the harsh, glaring light of a bare bulb. Below are 8 basic forms of lighting, which can be used separately or in combination with each other to produce the desired effect.

Soft Diffused Lighting –

Soft diffused lighting recreates the same kind of soft, delicate north window light that has inspired painters for centuries. A diffuser such as tracing paper is

placed over a flash-head or light source to scatter the light and soften its quality. Shadows are softer and the reduction of light with distance is less marked.

Diffused lighting can also be created by bouncing light into a reflector and then diffusing it through a sheet of frosted acetate or mylar. Layers of tracing tissue may also be used to diffuse light. Or even bed sheets.

NOTE In commercial photography, transparencies need the maximum degree of color saturation if the ultimate in color reproduction is to be attained. The most effective way to achieve

this is with soft, diffused lighting.

The retina of the human eye is so sensitive that the total range of tones it can perceive is in the order of 1:1,000,000. However, black and white film can only record a brightness range of up to 1:1000 while color film is limited to a brightness range of 1:200.

FUNFACT

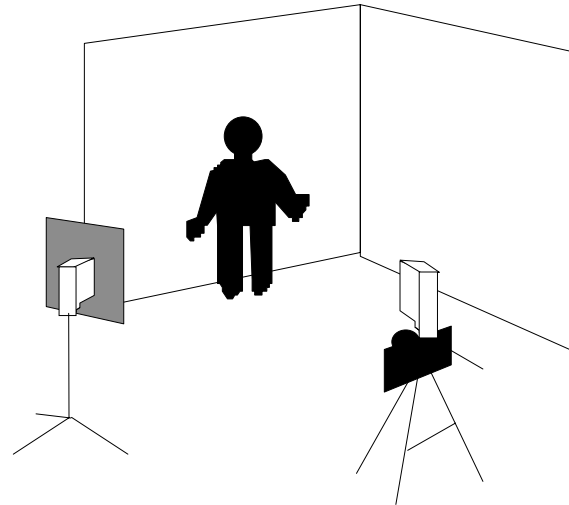
Direct Lighting – A light source or flashgun is aimed directly at the subject and illuminates it like a search light. The hard flat-on light reveals outline, but destroys form and texture. Foreground is always much lighter than background.

Direct All Around Lighting – Direct lighting from all directions removes all shadows. It also provides the fullest tonal range for reproduction and it is the only way to assure a technically perfect exposure.

Direct Hard Side Lighting – The light source or flash is detached from the camera, and aimed hard at the side of the subject. Textures are exaggerated, and contrast becomes exceptionally hard unless a reflector is used on the shadow side.

Umbrella Lighting – A light source or flashgun is aimed directly into an umbrella producing soft, shadow-free lighting. The lack of shadows is due to the wide dispersion of light.

Direct Lighting with Diffused Fill-in



Fill-in Lighting – A light source or flashgun is used at half power or heavily diffused to act as fill-in. Another is set at full power off or directly behind the camera to provide the principal source of light.

Reflected Roof Lighting – A light source or flashgun is tilted upwards and its light bounced off the ceiling. The result is soft, even top lighting.

Background Lighting – A flash or light source is held off the camera, with another illuminates the background. Subject background tone can then be regulated by using half or full power, or by varying light source to subject distances.

All prints should be developed to at least 5 inches by 7 inches and preferably 9 inches by 11 inches. These are the standard sizes for a press release and the easiest to scan into a computer.

Getting Your Film Developed

Professional processing companies that are distinct from the consumer type processing companies should be used to develop all your film. Although, they are usually double in price, considering the amount of money you will spend creating your photos, as well as, the extent they will influence the overall effectiveness of your advertising, this is no place to scrimp.

Size of Prints – All prints should be developed to at least 5 inches by 7 inches and preferably 9 inches by 11 inches. These are the standard sizes for a press release and the easiest to scan into a computer.

Building Your Own Darkroom – Unless there is a good reason your company needs a dark room, you should avoid building one. However, if you do create one, consider limiting yourself to color slide and black and white photos, which can easily be processed on your own, without extra expensive equipment.

Finding a Useful Resource Book

A good photography resource book should contain hundreds, if not thousands, of photos with explanations on how the final results were achieved (including film used, focus and exposure settings). These photos should be of everyday things like people, products and especially objects up close, not just award winning photos of sunsets and

mountains in faraway places.

The Photographer’s Handbook – 3rd Edition – *by John Hedgecoe, Copyright 1992, Doorling Kindersley Limited London.*

Ebury Press. This standard best-selling reference manual contains photographic equipment, techniques and procedures, backed by more than 1250 illustrations. In one tightly packed volume, it presents all the information that any photographer, amateur or professional, needs to have about cameras, films, processes, studio techniques and all the technical aspects that go into making truly exceptional pictures. Over one and a half million copies have been sold worldwide.

Shutter Bug Magazine *is full of photos and techniques useful to the commercial photographer.*



TURNING PHOTOS & IMAGES INTO COMPUTER FILES

NOWADAYS, taking photos is exciting, because any photo or image can be fed into a computer in the form of a digitized computer file and then manipulated with image editing software to improve the basic lighting or to create dazzling special effects.

To create these digitized computer files you can either:

- scan in photographs using a computer scanner
- convert slides and negatives to digitized images and store them on Kodak Photo

Photographic files are known for being inconveniently big causing programs to run painstakingly slow or not at all.

CDs

- use a digital or electronic imaging camera

Using Computer Scanners

As technology improves, people are beginning to expect presentations that look more professional – even if it is just a flyer, school report or a notice for a local garage sale. With the advent of computer scanners, CD-ROM drives, multimedia PCs, and larger cheaper storage devices, it is now possible for small businesses to have the sort of processing power and image manipulation software once reserved for the art departments of large corporations. In fact, whole lines of software are now being developed by major software companies to meet the

demands of the home office.

NOTE Photographic files are known for being inconveniently big causing programs to run painstakingly slow or not at all. It is common for one small single color picture for example to take up more than 4 MB of memory and a larger photograph over 16MB. To some extent, you can lessen this problem using black and white photos.

However, in either case it is recommended that before your begin processing photos you upgrade your computer with some serious RAM (32 to 64 MB or more), a faster processor (like a 233 MHz Pentium Chip with MMX technology), a graphics accelerating card and a 4-8 gigabyte hard drive.

It is recommended that before your begin processing photos you upgrade your computer with some serious RAM (32 to 64 MB or more).

Using a Flatbed Scanner – Scanning a photograph into your computer is easy.

First, use your camera to take a normal photograph of your subject with the sharpest lighting possible (shadows and out of focus elements can be added in later by computer software).

Second, have the negatives processed into a large print.

Third, preferably using at least a 1200 by 1200 DPI flatbed scanner – along with its add-in card and scanning program – scan the image into your computer and create an image file.

Fourth, use additional photo manipulating software to adjust the photo’s size, crop it, and even change the lighting – it’s like

having a your own mini-photography studio.

And **finally**, load the finished product into the desired document using a page layout or word processing program.

NOTE All scanners come with scanning programs that for the most part are quite functional.

Using EasyPhoto Reader – an Affordable Mini-Scanner – Having a suggested retail price of \$480 (and falling), the *EasyPhoto Reader* is a scanner designed specifically to scan photos. It provides crisp color scans at 400 DPI. The scanner plugs into the back of your printer port, and its adapter has a pass through feature to allow you to keep printing while having the

If you can't afford a computer scanner, or really don't need one extensively enough to merit a purchase, many service bureaus will be able to scan for you. Expect to pay at least \$2.00 a scan.

scanner attached to your computer. The scanner automatically feeds the image through, so you do not have to worry about uneven and jagged scans of your pictures. For images too big to be fed through the scanner, you can detach it from its base and use it as a hand-scanner whose mechanism will draw itself across an image.

NOTE A scanner of this sort is handy for putting together a small catalog (where high-resolution reproduction is not essential).

Using a Service Bureau – If you can't afford a computer scanner, or really don't need one extensively enough to merit a purchase, many service bureaus will be able to scan your slides, film negatives or prints to the me-

dium of your choice from about \$2 each plus the cost of the medium ranging from \$2 for floppies, \$20 for ZIP disks and \$15 for CDs. All you have to supply is the file names you want for the individual illustrations or photos. To save money you can also bring in your own storage medium, such as a removeable hard drive.

Using Kodak Photo CDs

Photo-CDs offer a unique way of having high-quality photographs stored in a computer-readable format. They are created by changing existing negatives or slides which have been produced traditionally using silver halide film stock, into digitized images, that are then burned onto special CD-ROM disks called Kodak Photo CDs. The images are stored using a proprietary compression

format at resolutions of up to 3,072 by 2,048 pixels.

Potentially, Photo CDs offer images that are far superior to other electronic imaged originals. Kodak claims image resolution is 16 times greater than current video and TV standards.

The Kodak Photo CD is fast becoming an image standard.
FUNFACT

One significant application for Photo-CDs is as an alternative to using conventional scanners if you require very high-quality digitized photographs – or if you simply lack a scanner. In fact, the applications for Photo-CDs as a bridge between conventional photography and software imaging seems very promising.

How can you make your own Photo CD? To make your own Photo CD, drop

off a roll of 35 mm print film, print negatives or color slides at a suitable local photo shop and ask the pictures to be transferred to a Photo CD (you can even select which negatives you would like).

The photo finisher will then take a blank Photo CD and burn all of the photos into it at one sitting. This is accomplished using a special film scanner that reads the film image, digitizes the information, and then stores it electronically. Once stored, the image can be called up on the photo-finisher’s monitor, cropped, color balanced and otherwise manipulated, before being finally transferred to the special Photo CD.

Since the Kodak photo CD file is compatible with many computer systems, the

Each Photo CD is capable of storing up to one hundred full-color images.

finished product can then be manipulated using other software or integrated directly into book design and jackets, documents and reports.

NOTE The Photo-CD process is multi-sessional. In other words, if your Photo CD is not full, additional photos may be added at a later date until it is full. However, once a picture is stored, it’s there for good – it can’t be erased. Each Photo CD is capable of storing up to one hundred full-color images.

How much does a Photo CD cost?

Making your own Photo CD isn’t cheap. A blank CD and the first 24-frame roll will cost about \$30. Additional photo CD transfers added to the disk will cost an average cost of 80 cents per frame for a full roll of

film. The per frame cost more than doubles if you want to select individual frames from an already processed roll of negatives or slides.

NOTE Bear in mind that the Photo CD allows the casual user to import extremely high-quality color images into documents and desktop presentations without the major investment required to add a high-resolution color scanner and/or electronic imaging camera to your computing stable.

What is the image quality of a Photo CD? Photo-CD images are stored in a unique file format. It uses what is called pyramid encoding. Each file contains six scans of the same image at varying resolutions.

For practical purposes Photo CD files can be thought of as 24-bit true color graphics.

Specifically, there’s a small thumbnail at 64x96 pixels, a large thumbnail at 128x192 pixels, a still larger thumbnail at 256x384 pixels and then three primary image scans, at 512x768 pixels, 1024x1536 pixels and 2048 x 3072 pixels.

For practical purposes Photo CD files can be thought of as 24-bit true color graphics. This means that they have the color resolution of a file created by a good flatbed scanner (300 dpi; 8 by 10 inches). However with the better mechanical positioning and scanning allowed by Photo-CD authoring equipment, the quality of a Photo-CD image will usually be noticeably better than the same picture scanned from a paper photograph.

NOTE A single computer Photo CD PCD

image file takes about 18 MB of hard disk space at 2048 x 3072 resolution. However, a 2400 dpi or 1200 dpi scan, which is the real standard of photo excellence, would require not eight times but 64 times more size; meaning you could only store 3 pictures on a CD ROM disk. Images of this size and color depth are not immediately useful in PC applications.

Do you need a special CD-ROM drive?

If you plan to start using Photo CD technology to design your ads, make sure your CD-ROM drive is Photo CD compatible. Most older CD-ROM drives are only single-session capable (those made in the early 90s), while almost all of the Photo-CD compatible drives being shipped today are the preferred multi-session kind.

A single computer Photo CD PCD image file takes about 18 MB of hard disk space at 2048 x 3072 resolution.

Do you need additional Photo CD

software? Photo CD access software is often included in many multimedia bundles and you can expect a significant number of programs to support direct import of Photo CD pictures in the future. Kodak’s *Access*

package, available for DOS, Windows, and the MAC, gives you a table of contents with thumbnail photos for browsing as well as lets you view entire individual images. Most importantly, it also lets you export Photo CD pictures as EPS, TIFF, RIFF, PCX or BMP files. *Graphic Workshop* for Windows has similar

feature and in addition, a wider choice of formats and processing options. *Easy Photo* by Storm Software (\$99) also reads Kodak Photo CD images. It lets you resize, rotate and crop them as well as adjust

color and exposure. It also comes with a handy tool to electronically remove “scratches” from your pictures.

What is the difference between normal CDs and Photo CDs? Rather than being stamped out of aluminum, as are normal compact discs, and CD-ROMs, Photo-CDs use a dye transfer process, which allows them to be written in multiple sessions. In theory this reduces the useful life of Photo-CDs some what – from several centuries for aluminum discs to several decades for a Photo-CD – although both estimates are a bit abstract and assume the worst possible storage conditions.

Using Digital Cameras

Although, the technology of Digital photog-

raphy is still in its infancy stage, with more traditional equipment and film far surpassing it in quality, the appeal of transferring photos direct from camera to computer is too good to pass up. Imagine being a photo journalist, and armed with only a portable stills-digital camera, a laptop, modem and a cellular phone, being able to beam your photos direct via satellite back to your newsroom. No darkroom required. For the everyday user, digital cameras can be used for:

It is better to be good than to be original.

**LUDWIG MIES
VAN DER
ROHE**

- brochures & catalogs
- buy/sell ads
- design/layout comps
- legal documentation
- letters
- newsletters
- presentations

- desktop publishing
- flyers
- family photographs
- greeting cards
- Internet communications
- proposals
- reports
- school projects
- technical manuals
- web page design

What is a digital camera? Digital cameras are essentially hybrids of video cameras and normal still cameras. The difference is that once light has passed through the lens of a digital camera, it falls on a charge-coupled device (CCD) similar to that found in a video camera, rather than being directed toward a strip of light sensitive film at the rear of the camera. The

CCD consists of a grid of minute pixels, each of which alters its electrical output as a function of the amount and quality of light falling on it. In this way, an electronic map of the scene is built up and stored on an electromagnetic medium – such as a reusable floppy disk – within the camera body.

NOTE Digitized images can be transmitted down normal telephone lines, even computer-to-computer, via a modem.

What is the image quality of a digital camera? No matter how sensitive the CCD within the camera, it cannot compare with the literally million of “image-grabbing” surfaces of the silver-halide grains that are present in traditional camera film. Even if this aspect of the system were improved, playback via a television means that image quality is ultimately governed by the num-

ber of lines of information that makes up the television image. In practical terms, the final picture quality of most digital cameras under a thousand dollars is close to the quality of a “Pocket instamatic” or upper priced Polaroid.

NOTE Image size in digital photography is measured in pixels, the same unit used to measure the image on your computer monitor. A medium resolution digital camera image is 640 by 480, which would almost fill the average monitor. A low-resolution digital image 320 by 240 pixels would fill less than 1/4 of the screen. Although a 640 by 480 resolution picture looks great at first glance, in the real world, a full screen digital picture could be printed no more than four inches wide before the quality becomes unac-

Many people buying start-up digital cameras are Web page publishers, which use small digital pictures.
POWERPOINT

ceptable.

What kind of digital camera should you buy?

For the average user, digital cameras are priced in the \$300 to \$1,000. Professional cameras for the news gathering industry, such as the *Olympus D-600L Digital Camera* (1280 x 1024 resolution) and the *Kodak DC-3e News camera*, range from US\$1,500 to over US\$20,000.

Cannon RC-260 and RC-570 – The *Cannon ION* may represent the face of things to come in terms of digital imaging. In size and presentation, it is not dissimilar to a normal compact camera, but instead of using film, it records about 50 color images per re-usable floppy disk. After recording, the camera can be attached to a video player, television, or

computer for playback purposes. Logitech also makes the *Photoman*.

Casio QV10 – Another hot contender in the digital camera arena is Casio’s QV10 (originally listing for US\$700). This camera is small, at just over half the weight of the Epson. Its most interesting feature is its LCD screen. It doesn’t use a traditional viewfinder like most cameras do. Rather you point it at an object you want to take a picture of, and it updates the image in nearly real-time, about once every half second.

The biggest drawback to this camera is the quality of its images. Although it can store 96 images in flash memory, and its

Real-estate agents and buy-sell newspapers could use digital cameras to take pictures of properties or merchandise, dump the images into a word processor and use an inkjet printer to produce custom feature sheets of their listings or newsprint flyers.

images look kind of cute on its mini 2-inch LCD screen, on an regular SVGA screen, the images appear jagged (equivalent to about 320x240 pixels). Nevertheless,

watch this model in the future when megapixel resolution becomes more economical and viable. This camera is FUN!

Epson’s PhotoPC Digital Camera – Epson’s digital camera, which looks very much like a regular 35mm camera (original street price of US\$500 and falling fast), is a capable and inexpensive tool for low-to-medium resolution digital-image production. Real

estate agents and buy-sell newspapers could use this camera to take pictures of properties or merchandise, dump the images into a word processor and use an ink-

jet printer to produce custom feature sheets of their listings or newsprint flyers. Small business owners could use it as a simple tool for getting product or company images quickly onto the Internet.

The PhotoPC comes with 1MB of memory which can hold 16 high-resolution images at 640x480 pixels or 32 low-resolution images at 320x200 pixels. Memory modules can be added bringing the image-saving capacity to a maximum of 5 MB or 80 high-resolution images. Images are in 24-bit (16.7 million) color. Color accuracy, saturation and the like are about what you'd expect from the 90's version of an Instamatic.

Kodak's DC20 Digital Camera – This cam-

Kodak's DC20 Digital Camera – This camera is barely one-quarter the size of the Epson Photo PC camera. It fits nicely into a shirt pocket.

era is barely one-quarter the size of the Epson Photo PC camera and fits nicely into a shirt pocket. The DC20 is also easier to use than the Epson. There are only three buttons (Power, Shoot, and Erase). It's also cheaper, originally listing for for about US\$350, it can now be purchased on clearance for under US\$100. However, the compactness and inexpensiveness of this Kodak exacts a hefty price. You can only shoot 16 pictures on low resolution and 8 on high.

NOTE The newer *Kodak DC-210 Zoom Digital Camera* offers up to 1152 x 864 resolution (US\$900).

Nikon QV-100c and Kodak DCS – For the newsgathering industry, the ability to be able to transmit images back to base via

the telephone is vital. Nikon’s QV-1000C is a purpose-built, black and white only, digital stills camera. It retains the look and feel of a normal SLR, but its images are recorded on an industry standard floppy disk. An integral part of the system is a transmitter with built in monitor, which can be plugged into a TV network for instant transmission of images anywhere in the world.

Another contender, the Kodak DCS (Digital Camera System), is designed to hook up to an unmodified Nikon F# and has both black and white and color options. Once the system is in place, im-

ages are stored in the companion DSU (Digital Storage Unit) which has a capacity of up to 158 uncompressed or 400-600 compressed images.

Kodak’s high-end DC-3e News camera produces images 10 times larger than start-up digital cameras. The best studio digital cameras can go another eight times higher. But after the digital dust settles the fact remains that Kodak’s best color film, Kodachrome, now a half-century old, can carry about 25,000 times more information than the best digital camera.

FUNFACT

Snappy – An economical way to get your own digital images is to capture video frames from home video using an affordable little gizmo called *Snappy Video Snapshot* (from Play Incorporated). *Snappy* sells for less than US\$100. Plug the palm-sized gadget into your PC, hook up your video camera to it and capture 1,500 by 1,125 pixel

color images from video.



MANIPULATING DIGITIZED PHOTOS

THE LINKAGE of photography with computer technology has enormous advantages to ad designers. Although there are some limitations, a skillful retoucher can manipulate photos beyond the wildest dreams of a traditionally trained darkroom technician. At the whisk of a light pen or at the click of a mouse button, the colors of a digitized photograph or slide can be corrected, altered, or changed from light to dark. Colors can also be added or removed and patterns changed, backgrounds eliminated, and even mustaches shaved.

Furthermore, bizarre, neat and even life-like special effects can be added in ways

Although there are some limitations, a skillful retoucher can manipulate photos beyond the wildest dreams of a traditionally trained dark-room technician.

never imagined before to transform ordinary, everyday photographs into final art that can look as if it were created with anything from a paintbrush to a graphic pen or even mosaic tiles.

Comparing Digital Editing Software

There is a huge selection of digital editing software. This software ranges from the big expensive image-editing programs like Adobe's *Photoshop* to *Graphics Workshop* which can be downloaded off the Internet for free. These and other popular image editing software are described below.

Adobe's PhotoDeluxe – *PhotoDeluxe* is Adobe's *Photoshop* for the masses at a cost of about \$100. Although a shadow of

its big brother, it is easy-to-use and comes complete with some pretty high-end filter effects. It also offers a large range of tools including layers, *Kai’s* filters, a good help guide and ready to use hardware add-ons like *Snappy*. *PhotoDeluxe* also takes plug-ins for acquiring images from scanners and digital cameras.

Adobe’s Photoshop – The best known professional digital editing software is *Photoshop* (from Adobe Systems) for Mac and Windows. Its \$900 price tag and demand for upwards of 150 MBs of RAM make it affordable for very few folks.

Corel’s Photo-paint – Another option worth serious consideration is CorelDraw’s *Photo-paint*, which comes bundled in CorelDraw 6.0, 7.0., and 8.0. At one time,

The best known professional digital editing software is “Photoshop” (from Adobe Systems) for Mac and Windows.

Photo-paint was considered something of an ugly kid sister to the tall and elegant *Photoshop*. However, today *Photo-paint* is all grown up. Not only can it do most of the things *Photoshop* can do but it can also create and edit AVI movies with ease.

NOTE *Photo-paint* from Corel and for that matter *Picture Publisher* from Micrografx are just a few shades less capable than *Photoshop* but include some very useful features lacking in *Photoshop*. Both allow users to undo any step in a long project and feature macro recording so you can apply a series of commands to other files. Both also feature the ability to open large picture files in small sizes for work on slower computers.

Graphics Workshop – *Graphics Workshop* for Windows can be downloaded as shareware from various Internet sites and on-line services. It is also included in most computer graphics books bundled with floppies or CD-ROMs. It features a handy thumbnail viewing system and numerous filters for adjusting color and contrast and cropping. It can also convert to just about any graphic file format.

Micrographx’s Picture Publisher – *Picture Publisher* like most high end image-editing programs, supports images saved in the TIFF, GIF, JPEG, BMP, PCX, TARGA, EPS and other popular formats, but it comes with a better selection of effects than most competitors in its class, and it offers one of the best interfaces for selecting them.

“Graphics Workshop for Windows” can be downloaded as shareware from various Internet sites and on-line services.

NOTE For about \$200, consider purchasing the ABC Micrografx Suite which includes *Picture Publisher*.

Software Plug-ins – In the image editing software field, third-party software developers have designed special effects plug-in programs to increase the usefulness of the larger more expensive image editing applications. A plug-in needs a host program to run from. The best known plug-ins are *Kai’s Power Tools* and *Convolver* (both from MetaTools). Another recently developed plug-in is *Kai’s Power GOO* a special-effects graphics program unlike any other. For \$70 *GOO* allows you to quickly distort or blend images. You can also create movies (*GO-Ovies*) which show entire transitions known as morphs.

Xaos’s Paint Alchemy – *Paint Alchemy* comes with 75 different preset styles that can be combined with 36 different controls to create millions of custom effects. This product lets you paint effects on sections of an image or modify the entire image in one step.

Other Special Effects Programs

– Applications like *Aldus Gallery Effects*, *Fractal Design Painter* and *Fractal Design Sketcher* can enhance plain-Jane images by using a pastel finish for a softer appearance and quickly turn any image into an illustration with a distorting water-color effect.

Finding Inexpensive Photos in Digital Format

To add photos to your brochures or per-

haps your web site, you may be able to use some of the pre-digitized stock images available on disk or CD-ROM from companies like Corel Corp. and 21 St. Century Media. These vendors offer their images with almost unlimited rights for use in in-house work.

To add photos to your brochures or perhaps your web site, you may be able to use some of the pre-digitized stock images available on disk or CD-ROM from companies like Corel Corp.

Corel for example distributes a huge number of CD stock photographs on any subject. Its Corel Stock Photo Library includes 20,000 royalty-free photos in 200 CD-ROMs which can be purchased for about \$1,200 Canadian per set.

Generic digital photos can be also be found on on-line services like Compuserve and numerous

sites on the Internet. In addition, art and photos whose copyright has expired can be copied at no charge.

NOTE Collections of free art and illustrations may be available in the historical sections of your local library (bring your notebook and a handheld scanner).

Familiarizing Yourself With Photo File Formats

Digitized photo files can be created using many different types of software applications, each having their own file format or following a standard set by another format. A photo filter is a software program that enables your photo-editing program to interpret and display a file created in another application. File types are named according to their DOS extensions. Popular photo file

formats are:

- .BMP** Windows bitmaps (no filter required when running windows)
- .EPS** Encapsulated PostScript files
- .PCD** Photo CD file format
- .PCX** Paintbrush files
- .TIF** Tag image file format (TIFF)

File types are named according to their DOS extensions.



CREATING COMPUTER ILLUSTRATIONS

THE WORLD of computer graphics is fascinating but still relatively new compared to the more traditional forms of graphics manipulations. Some of the problems that need to be addressed, before it truly takes over the design process, revolve around computer visuals that tend to take a lot of memory; software that has problems recognizing and dealing with one file format and another; and the many difficulties involved in the printing of graphics. If you seriously want to get into computer graphics, one of the best books on the subject is simply titled “Graphics and

A replacement for silver-based image recording is inevitable. Silver is an increasingly rare and thus increasingly more expensive resource, and the film industry uses millions of ounces a year.

FUNFACT

the Computer” by Willie Nelson.

Familiarizing Yourself With Graphic File Formats

Graphics files can be created using many different types of software applications, each having their own file format or following a standard set by another format. A graphics filter is a software program that enables your graphics programs to interpret and display a file created in another application. File types are named according to their DOS extensions. Popular file formats

are:

- .CDR** Corel Draw files
- .CGM** Computer graphics metafiles

- .DRW** Micrografx(r) Designer TM/Draw files
- .HGL** HP graphics language files
- .PCT** Macintosh PICT files
- .PIC** Lotus 1-2-3r graphics files
- .WMF** Windows metafiles (no filter required when running windows)
- .WPG** WordPerfect graphics files

Using Clip Art

Clip art consists of illustrations made by professional computer graphics designers stored under easily accessible file formats. The illustrations can be used however you want and even modified to suit your purposes. They can be used to

spice up brochures, flyers and newsletters.

CoreIDRAW comes with a CD-ROM containing over 100,000 clip art images. To help you find the clip art you want, it also includes a text with pictures of its images.

Two top illustration programs are "CoreIDRAW 8.0" for IBM; and "Adlus Freehand" for Macintosh.

Picking the Best Illustration Software

Graphics or illustration programs allow you to create line figures and computer art, in addition to offering an assortment of photo manipulation tools. Two top illustration programs are *CoreIDRAW* for IBM and *Adlus Freehand* for Macintosh. These 2 programs are without a doubt industry standards, with *CoreIDRAW* holding 90% of the IBM market share and *Adlus Freehand* 85% of the Macintosh market share. These programs should be considered

above all others, as most ad agencies and service bureaus are familiar with them.

Corel’s Xara – If you take *CorelDRAW* and *Photopaint* applications and strip them down of all fatty deposits, and then turbocharge what’s left over, you get *Xara*. The 32-bit *CorelXara* (\$300 for Windows 3.1, 95 or NT) doesn’t do everything the larger packages do, but what it does do it does fast, very fast. *Xara*’s refresh rate is unsurpassed. As well, its ability to move and resize bit-maps without distorting them is second to none. In fact, with *Xara* you will find yourself dragging your drawings around just for the fun of it, and for the most part they will keep their original look with amazing clarity.

Digitized images require lots of RAM memory. You will need to upgrade your computer to at least 32 MB-64 MB of RAM and your printer as well.

SUPERTIP

Hand Creating Illustrations

With the onslaught of computer technology, everyone seems able to come up with impressive computer illustrations that boggle the mind. However, though artistically appealing, this doesn’t necessarily sell products. Sometimes simplicity is more poignant.

Line art can be created on paper, with dark pencils and then scanned into a computer where it can be further manipulated e.g., colors and backgrounds filled in. In fact, if you fancy yourself as an artist, you may consider creating your own illustration and diagrams, especially for cartoons. The world needs variety not homogenous advertising.

NOTE In *The Entrepreneur’s Guidebook*

Series, all *TEGuS* cartoons were created using nothing more than a mouse, Microsoft’s Word 6.0 and Word97 and some clip art.

Constructing a Camera-Ready Mechanical

Assuming you are working in black and white, there are several ways to construct a mechanical, or camera-ready layout used for printing:

- You can have it run entirely off a Linotronic Image Setter, either from your computer disks or through a network or telephone line hookup. This implies all the elements on your mechanical are computer generated – word-processed text and display time, as well as photos that are scanned, cropped and sized in

In The Entrepreneur’s Guidebook Series, all TEGuS cartoons were created using nothing more than a mouse, Microsoft’s Word 6.0 and Word97 and some clip art.

either a photo manipulation program – such as Image Studio – or right in your page layout program, such as

Pagemaker. Color separations are also included.

- You can run the basic text on a Linotronic and have photos and art shot separately and stripped into the negative or half tone before the printing plate is made.
- Or you can run your mechanical on a laser printer at either of the above two levels. This assumes you either don’t have access to a Linotronic, or you don’t feel that the extra quality is needed for your particular publication.

NOTE Simple brochures can be created using desktop publishing programs, printed

out on high resolution graphics with a few, half-tone pictures added here and there to increase visual impact. Color graphics for books can also be added the old fashioned way, by using picture windows and processing the color graphics separately.



Simple brochures can be created using desktop publishing programs, printed out on high resolution graphics with a few, half-tone pictures added here and there to visual dramatic impact.