

1: Ghost Photographs

Film Speed Rating - ISO / ASA All film has a speed rating, whether digital or traditional. You may see this number called ASA or ISO (both indicate the film's rated speed).

The processing unit is as powerful as your brain. The computer is accurate over a light range from reflected starlight through the light produced in a hydrogen fusion reaction. This computer weighs nothing and operates without batteries. It comes with instructions to allow you to implant the capabilities of the computer directly into your own memory so you can accurately judge a correct exposure by simply looking at the type of light that the subject is in. You are using this computer right now! An entire photographic industry has been built by convincing consumers that the subject of photographic exposure is so arcane, difficult and impossible to understand, that it is best left up to technology. This, of course, allows companies to sell billions of dollars worth of equipment to figure it all out for you. The fact is that the concept of photographic exposure is extremely simple. It can be mastered by anyone who can multiply or divide by two. Everything you need to know is contained on these few Web pages. Knowledge of photographic exposure is essential to controlling the creative side of the photographic process. This knowledge increases the chance that the photograph that comes back from the lab is the one you envisioned when you pushed the shutter release. Your camera or light meter can not make creative decisions for you. If you want to control the creative side of photography, you need to understand the interrelationship of Exposure Value, film speed, aperture and shutter speed. You must have this understanding even though you own the most sophisticated equipment available. I have watched photographers amateur and professional struggle with this subject for a number of years, confused by the misinformation that abounds in the photographic press. I decided to publish this document to clarify, simplify and demystify the issue. But first, a word about copyright. This document is copyrighted. In order to keep the cost down, it has been published in a form that would be easy to copy. Copyright law strictly forbids copying this document. You may print a copy or two of the Ultimate Exposure Computer to keep in your camera bag for personal use. In fact, I would encourage it. However, please do NOT make copies for your friends, students or any other person. Originals are inexpensive and easy to obtain. If you have a related site commercial or otherwise please hyperlink to this site for access to this document. Their response to various colors of light may not match that of your film. Their response in low light and high light conditions may not match response at the mid-range of light. But the worst characteristic, for practical purposes, is that all reflected light meters make one basic erroneous assumption. They are calibrated to render an exposure that will make the subject look like a middle tone in the resulting photograph. How do you compensate for the fact that your meter is lying? You have to lie to your meter. The same is true for dark objects. You can tell this white or black lie to your meter in a couple of ways. You can meter a middle-toned area in the same light as your subject and manually set your camera accordingly. You can lie to the camera outright by telling it that it is using film of an ISO rating different from what is actually in the camera. For instance, if you are using ISO film and are photographing a light subject, you would tell the meter that you have ISO 50 film. If you are photographing a dark object, tell your meter that you have ISO film in the camera. This method works well for cameras in automatic exposure modes. Be careful to tell your camera the truth if you move to a middle toned subject. Another way to get the right exposure from a lying meter is to politely ignore it. Switch from automatic to manual exposure a good idea anyway and simply move to the next larger aperture or the next slower shutter speed for a light object or to the next smaller aperture or faster shutter speed for a dark object. Your meter deceives you, so you deceive it. But what kind of relationship is this? The Ultimate Exposure Computer does not make erroneous assumptions, because you tell it what type of light your subject is in. As long as you tell it the truth, it will not lie to you. Definitely a better relationship. There is a chance that the preceding section may have confused you. Each of these four factors is represented by a series of numbers. Your camera may have only a portion of each series indicated. In most light meters, photons of light that are reflected from your subject put pressure on a photo-sensitive receptor in your light meter and are converted into electricity this is why some meters do not require batteries. The greater the number of photons, the greater

the electricity that is produced. Internationally accepted standards specify exactly how much light pressure equals a certain EV number. This value is measured by the following number series for ISO film: However, even though this appears to be a linear progression, each number represents twice as much light as the numbers increase. This provides an easily memorized scale to clarify the concept of "absolute value of the amount of light falling on a subject". This term is related to illuminance, footcandles and lumens. If you are using a light meter this number is irrelevant, and you can ignore it. You may never see these numbers, because the meter uses them internally to calculate a set of combinations of shutter speeds and apertures. However, knowledge of Exposure Value can significantly enhance your ability as a photographer. The Ultimate Exposure Computer gives you the knowledge to take control of your photographs. The relationship between these four elements is represented in the Ultimate Exposure Computer. Film speed is a number that indicates the sensitivity of film to light. In general, films with a higher sensitivity larger number have coarser grain and do not register detail as well as films with lower sensitivity lower number. The number series for film speed is: Moving to the right, each number is twice the preceding number, and represents twice the sensitivity to light as the preceding number. There may be some intermediate steps such as 64 or on your dial. Set the light meter or camera for the same number that is on the film. Your camera may do this automatically. This leaves only two things to adjust to achieve the correct exposure while making a photograph; shutter speed and aperture f-stops. Shutter speed and aperture are very important to the creative photographic process. Shutter speed indicates how long the camera shutter remains open to let light onto the film. The number series for shutter speed is: These numbers are whole seconds or fractions of seconds. There is an important rule regarding shutter speeds: If your shutter speed is slower than the reciprocal of the focal length of your lens, you must use a tripod. If not, you should use a tripod. If your subject is moving, double this shutter speed. If you are moving such as in a boat or plane triple the speed. If you are doing macro work. To be safe, weld your camera to the tripod. If you are a serious nature photographer you will always use a tripod, anyway. A tripod will allow you to make photographs with slower film speeds. Slower film speeds equate to better detail and sharpness in your photographs. More important, using a tripod makes you slow down and allows you to examine your composition more carefully. Modern electronic cameras may lack certain features of the older, mechanical cameras such as a button that allows you to see the depth of field that will be present in your photograph, but every camera has a tripod socket. Aperture refers to the size of the opening inside the lens that the light must go through to reach the film. These are actually fractions. They should read as follows: But why do the numbers look so odd? Just accept that each progression represents half as much light as the preceding number. If you are curious as to how we got to such a seemingly illogical progression of numbers, read the following three paragraphs. The numbers represent the ratio of the focal length of the lens to the diameter of the lens diaphragm opening. As you no doubt learned in high school, the method of calculating the surface area of a circle is Pi times the radius, squared Pi is approximately 3. Therefore, in our example, the surface area of the opening would be 3. The surface area would be 3. If you multiply it out, you will see that the surface area is now approximately sq. The reason we use the ratios instead of the actual surface area of the diaphragm opening is that the actual surface area would be quite different between lenses of different focal lengths. Photographers would have to memorize a series of numbers for each focal length lens they owned.

2: Using ASA for film? | Yahoo Answers

Film speed is the measure of a photographic film's sensitivity to light, determined by sensitometry and measured on various numerical scales, the most recent being the ISO system.

Exposure times, aperture settings and film speed You are here: These are the lens aperture, shutter speed, and film or sensor sensitivity. A camera lens consists of several groups of glass lenses, each group containing one or more elements. There is a group at the front of the lens, where the light comes in, and a group at the back, which mounts to the camera. Between these, all light rays travel parallel to each other, and this is the location of the aperture diaphragm of the lens. When you turn the aperture ring on a lens while looking through it from its front, you can actually see the aperture as a set of blades being adjusted. Most lenses allow you to change the aperture by half stops, to have finer control of exposure. A stop difference in exposure is usually rather coarse. Each step is called one stop, and is a factor of 2 difference in light throughput. This is because the aperture setting is a diameter, and the light throughput is proportional to the aperture surface area which is proportional to the diameter squared. At larger apertures, the depth of focus decreases, and everything except objects within a narrow range of distance will be unsharp. Shutter speeds on older manual cameras can be adjusted usually by a dial or wheel on top or front of the camera with these numbers printed on it. The newer digital cameras and automatic film cameras will also have shutter speeds much longer than 1 second, such as 2, 4, 8, 16 and 30 seconds. In addition to a range of shutter speeds, most SLR single-lens reflex cameras have a B shutter speed, which stands for bulb, a manual shutter control. In B mode, the shutter will stay open as long as you keep the shutter release depressed. This is only practical but extremely useful for long exposure times, longer than about one second. All shutter speeds that differ by a factor of two differ by one stop. Film or sensor sensitivity The film sensitivity determines how quickly a film or sensor will respond to a certain amount of light to become properly exposed. The lower the ISO number, the less sensitive a film is. Most slide and print films have sensitivities ranging from 50 to ISO in factors of 2: Digital sensors traditionally have similar sensitivities, also given in ISO numbers such as , and so forth. This is especially helpful for those of us that were already used to film. Thus, a difference of three in DIN number corresponds to one stop difference in sensitivity. Trade-off in exposure settings It would be wonderful if all three exposure variables could be adjusted freely without affecting other things such as the quality of the photo. But everything comes with a price. Some lenses are worse than others at full aperture, but as a rule you should use a lens at apertures of 2 or 3 stops smaller than wide open, if the available light permits. You should avoid the smallest apertures of a lens if possible. Also, as noted above, the aperture determines the depth of focus. With weather photography this is usually not an issue since most subjects are at infinity, so the depth of focus is irrelevant. But for macro photography, for example, it is very important. Long exposure times require a tripod, and will usually blur the photo if you photograph moving subjects. With film, long exposure times will also suffer from reciprocity errors. Short exposure times however are not always possible because the light may be too low. Low film sensitivities low ISO number require longer exposures, which is not always possible, and high film sensitivities suffer from coarse film grain or, with digital sensors, from thermal noise. It depends entirely on the type of phenomenon and the amount of light available which of the three exposure variables will be most important to you. Deciding exposure settings requires some practice and experience. Several combinations of settings will yield the same exposure, but with different trade-off in quality. But this only starts to matter for longer exposure times over 1 second or so the so-called reciprocity error. All material on this site is copyright of Harald Edens, unless explicitly noted otherwise. Reproduction of any of this material in any form without my prior approval is not allowed! For any questions concerning this site, read the contact information , and send an email if your question is not answered there.

3: When to Use Different ISO Film Speeds | Guide to Film Photography

*Photographing With Asa: A Fountain Press Photobook [Hans Gotze] on www.enganchecubano.com *FREE* shipping on qualifying offers.*

Speed will work along side the aperture and shutter speed of a film camera to determine length of exposure for successful basic photography tips. The speed is determined with a calibration number that can be used to compare different films. This number essentially describes how fast the film can capture an image when exposed to minimal light. The ISO film speed can range anywhere from 1 to over 32, For some beginner photography tips regarding film speed, read on to discover which speed is right for the conditions you plan on photographing in. This requires plenty of light and is normally recommended for clear, sunny days. The grains of light sensitive material in the film are very small and work well for creating large prints from the small negative. This basic photography technique works well for shallow depth of field as a slow shutter speed and open aperture can be effectively used in bright conditions. And with more light needed for exposures, slow speed film appears to have more contrast than other film types. Fast Speed Film Guide to Photography Photo film with an ISO around will have a larger grain size in the light sensitive material when compared to slow film. This will, of course, require less light for a proper exposure and may result in visible grain on your photographic prints. Motion blur is minimized and often yields a great depth of field as shutter speeds are faster and the aperture remains somewhat closed. This film will also give good results on a cloudy day. The speed of this film requires minimal light to make an exposure and may be useless in sunny conditions. The bright light of a sunny day will require very fast shutter speeds and apertures that will only result in frozen motion and great depth of field. However, the film is utilized mostly for indoor activities – particularly fast moving activities such as sports. But due to typical low lighting conditions, the contrast will be minimal and the grain will be most evident. Before anything else, once film is loaded into your 35mm camera, you must set the film speed ring on the top of your camera. Alternatively, if you are using a handheld light meter, you must specify the speed on the meter. After that, you are free to start shooting with basic photography techniques such as night photography and winter photography. Read more about setting your camera for different film speeds in the film settings page.

4: I STILL SHOOT FILM

The film type is Ferrania film. Rebrand as Lomography doesn't make their own. I called Amazon support and they sent me a new 3 pack of film to replace the batch I have.

Learn Night Photography How many seconds? Photography is really about light. Mixed Light To start with, you generally have to understand "mixed light". Often in a scene there are two or more types of light. One might be fixed moon light, city lights and another is variable fireworks, flash lights, on camera flash. The goal is to balance them. Here a cave entrance outdoors is balanced with the lights built into this cave display. Balance is achieved by how much of the scene is shown - more of the cave the yellow part, the less green outdoors shows. Here it was just luck that they were roughly the same brightness. Here there is a fixed light source the sun coming through and a variable source my flashlight back filling the scene. The flash light was on for about 4 seconds at the end of the scene to fill in the cave. The flash light filled in the tent in 6 seconds. Perhaps the hardest example of balance. The city has one proper exposure say 6 seconds at f8. The fireworks are variable in time but not aperture. If you open the aperture say 3 seconds at f5. Balancing this is hard. Cities 30 seconds or less Cities have a little bit of everything in the for light. They are generally pretty simple to expose - you are balancing the city against another element - generally a sky or a foreground element. Generally you are trying to pick up as many colours as possible. Of course you need a tripod or solid support for any photo this long. Fireworks 4 - 12 seconds One of the most fun types of night photography is taking pictures of Fireworks. I have a page of just fireworks photos, but here are some favorites: Fireworks are a great way to burn film. The formula I use is f8 for asa film with a 4 to 12 second exposure. The exposure is hit and miss - using the bulb feature on the camera and a cable release, open the shutter when it looks like the fireworks will be good and hold the shutter open for as long as you need to fill up the image. A tripod is a must - a clamp works in a pinch. Blue fireworks are difficult to capture they are dim and green fireworks are generally the brightest. I shoot two to three roles of film each time I attend. If you are using speed film, use f Like anything in photography, once you get good, get closer. Here that means zoom in. Sparklers 3 seconds Another fun pyrotechnic source of light is sparklers. They are often available with birthday cakes and at Halloween. I have a page from one experiment, but here are some favorites: These exposures were about 3 seconds long at f16 on speed film. The trick here was to use a flash set on rear curtain sync the flash fires at the last moment before the shutter closes. Campfires 6 - 30 seconds Campfires provide a nice light. The two pictures below are about 6 seconds in duration on 50 speed film at f1. You can use a bigger fire and mix other light sources. First, taking photos just after the sun goes down, you can pick up the residual light. Second, you can hide a lantern to light people up. Or you can just expose longer. Using speed print film, f4 at 30 seconds yields a very different picture. The people have blurred out a little but the background has been lit up by the ambient light. Flashlights seconds Without a sun, you can leave the shutter open fairly long and compose how you want. This picture is a 2 minute exposure at f1. I set the camera on a tripod and with the shutter open used my flashlight to paint in Andrea. Once I painted here once, she moved and I painted her again. It was lots of fun! No on board flash was used - the light is hard, bright and difficult to control. These two pictures are 5 minute exposure at f1. Unfortunately, city lights often overwhelm stars so getting a good photography is often an issue of geography. The trick is to keep the aperture at maximum - stopping down will make most of the stars disappear. The longer the exposure, the longer the trails. Moon Light seconds While visiting the Grand Canyon, I decided to take a night photo - roughly 5 minutes at f4 on 50 speed film. The smoke has descended into the Canyon - there a was a park notice the next morning.

5: Ultimate Exposure Computer

For black and white, I would suggest knocking approximately 20% off the developing time. At least, that's my rule of thumb for pulling film. For C, the exposure latitude is pretty good, and you probably wouldn't notice too much of a difference.

Film Exposure ISO film speeds are an important part of film photography as each film speed is used for different scenarios and lighting conditions. The first and most important piece to understand about film speed is that the higher the ISO number, the more grain is visible on the film and the subsequent prints. However, sometimes you simply cannot avoid using the faster film speed and will just have to accept the level of graininess that comes with it. As this is a slower film, more light will be required for exposures. If there is not enough light available, slow film may result in dark or blurry photographs. A tripod is highly recommended when using low-speed film unless the photographer has an extremely steady hand for slightly longer exposure times. Slower speed film is best used to photograph outdoor landscapes, inanimate objects, and outdoor events on a bright day. Slow speed film should generally not be used for dimly lit areas and fast-moving subjects. Photographs can be taken without the need for high amounts of lighting and moving subjects can be photographed with ease. The versatility of this film makes it ideal for photographing in a variety of circumstances such as open landscapes or indoor areas. Indoor photographs can be taken with significant lighting available through a window or doorway. Medium speed film is best used to photograph overcast outdoor images, indoor portraits with natural lighting, and when photographing a combination of indoor and outdoor images on the same roll. Medium speed film should generally not be used with fast motion photography such as sporting events, indoors without much lighting, or in extremely bright lighting. Fast Film Speed – ISO and Above Fast speed film will result in the grainiest photographs but is great to use when shooting fast-moving subjects in low light conditions. This film is often used by sports photographers or journalists who do not always have the best lighting to work with and need to capture images without blur. In addition, it is typically not used for larger prints due to the noticeable grain. Fast speed film should be used for fast-moving subjects in low light, dimly lit situations without a tripod, and when using a zoom lens in low light conditions. With these hints in mind, you can be ready with the right kind of film for the subject you are about to photograph. However, the rules of film speed use can be broken and exceptions are always made. Some people may prefer the high grain of a fast speed film. Others may be interested in night photography and keeping as low-grain as possible, so they will use slow film and a tripod for long exposures.

6: Film speed - Wikipedia

ISO Film Speed Photography Guide and Techniques. Film speed is the major marker between differences in photography film www.enganchecubano.com will work along side the aperture and shutter speed of a film camera to determine length of exposure for successful basic photography tips.

Tips on Spirit Photography by Dale Kaczmarek Spirit photography is a bit tricky and, at times, downright frustrating, however I hope these tips will better your chances of capturing something, of a paranormal nature, with your camera. First of all, any camera at any given time can capture a ghost on film. We have examples on: Infrared film even betters your chances still further since this type of film is very sensitive to a broad span of invisible light; much broader than the visible light that our naked eye picks up. When I attempt to photograph ghosts, I always use two 35MM cameras. One loaded with black and white high-speed infrared film and the other loaded with ordinary black and white high-speed ASA print film. Then you can compare the two different prints when they are developed. Therefore you can use the ordinary high-speed film as a control mechanism for verifying your own results! For those who wish to try infrared film, I offer these tips. First of all, use only black and white infrared film and not color ektachrome. Besides that color ektachrome only comes in 36 exposures and is slide film and not everyone has a slide projector. Other tips are as follows: About one hour before loading, take out the film and allow it to warm to room temperature to prevent possible fogging of the film. A pitch-black closet will do quite nicely, and while a photographic darkroom is even better, do not use a red safety light since it also gives off infrared radiation. Put the exposed roll back in the original film canister, tape it shut and mark properly for the film developers. If you are not going to have this developed immediately, place the exposed film back in the refrigerator. I also suggest not keeping the film in the camera for more than a few days, but if this is not possible, place the entire camera in a cool location. A basement is often an ideal place. When shooting the film outdoors in bright sunlight, a setting of ASA should be sufficient. However, if you intend to use it indoors or at night, then the setting should be at least ASA. Be sure to inform the processor as to what ASA setting you have used so the film can be developed accordingly. It must be opened in TOTAL darkness, otherwise light will ruin the film and all photographs on the roll!! Also pay strict attention when you are purchasing the film. It most likely has already been heat damaged. This is only advisable under certain conditions. It is good to try a variety of filters and no filter at all since all filters restrict certain light and color spectra from reaching the emulsion layers of the film. You still get varied responses but this is the best bet for capturing images on film that I have found. Use a steady tripod, cable release and time exposures. Doing all the above should provide you with much better photographs! I hope these tips will be useful to you and if you are indeed lucky enough to capture something with your camera, remember the Ghost Research Society performs FREE analysis on all photographs submitted to them. All photographs will be returned within weeks, if requested and all information will be held in the strictest of confidences! Additional books and magazines on the subject of spirit photography include: Threshold of a New Science by Hans Holzer. Photographing The Invisible by James Coates. Ghost Research Society www.

7: Photography techniques: Exposure times, aperture settings and film speed

Medium Film Speed - ISO ISO film speed is a great all-purpose film that can be used for most situations. Photographs can be taken without the need for high amounts of lighting and moving subjects can be photographed with ease.

Unfortunately, there is no other film or system more costly or as tricky to use either. I want to warn you before trying infrared film that there is a lot of experimentation involved with becoming good at it, a lot of money that can be spent in collecting the necessary tools and a lot of time that will be used in working at it. Infrared photography will not be for you. Color Infrared film creates startling new colors for ordinary ones and becomes difficult to tell what is paranormal and what is not. Infrared films are sensitized to light that we can see with the naked eye, as well as light that is of a different wavelength of radiation and is invisible to us. Infrared exposure will show up as a light area in a print and as a dark color on the negative. The film allows you to see, literally, what is beneath the surface, or what the human eye cannot see. Infrared does not detect heat, but rather sees and photographs radiation. Because we believe that paranormal energy also lurks in this same "dead zone", infrared film becomes a very helpful tool in ghost hunting. How to use Infrared Film 1. It has been suggested that if you are going to try infrared film, you should take along 2 different cameras on an investigation. One of them should be loaded with or higher ASA film and one with infrared film. It comes in 36 exposure rolls. Remember that you are going to have to experiment with this film. The first time that you use it may be a total bust! There is always time for a solid investigation using infrared film later. When the film arrives, it should have come in a box packed in dry ice to keep it cool. Infrared film is sensitive to heat and must be kept refrigerated before it is used. If you buy the film already in stock at the camera shop, make sure that it was kept cool. You should store the film inside of your refrigerator and not take it out until about one hour before you are going to load it into your camera. This way, it warms to room temperature and you avoid any chance of fogging the film. Also essential is the fact that this film must be loaded and unloaded in total darkness. Find a room or a closet with no outside light and stuff towels under the door or any other way that will make the room pitch dark. Then, you can safely load the film into your camera. Any light leaks at all can damage the film! To further protect against light leaks, put a piece of electrical tape over the small window in the back of the camera. This window can allow a small amount of light to get into your camera. Also note that most automatic cameras cannot be used with infrared film. There is an infrared sensor inside most models to make sure that the film advances properly. This sensor will badly could your film. When using the film, some researchers recommend different filters to use when working with infrared film, so experiment and see what works best for you. Deep red filter blocks no. When shooting in the daylight, you will want to make sure that you have a filter, as UV rays and other spectrums of light can cloud or overexpose the film. Also, try not to use a flash because you can get some very weird light reflections from it. If you do use a flash, be sure that it has the same type of filter over it that your lens does. After the film is exposed, unload the film in your "dark room" and place it back into the container that it came in. Tape the canister shut and do not allow it to be opened by anyone until it is ready to be processed. Often, the staff at the camera shop will open canisters and dispose of them but do not allow them to do this, it will ruin the film! This is why it is important to take the precaution of taping it shut. Good luck in using this type of film. You never know what you might find!

8: asa film | www.enganchecubano.com Photography Forums

As a follow up to understanding aperture, I thought it would be nice to go over the basics of film speed or ISO (formerly known as ASA.) ISO is the speed of the film, also known as the number printed on the box and the canister. FujiChrome Velvia 50 has an ISO of 50; Ilford Delta has an ISO of.

9: List of discontinued photographic films - Wikipedia

PHOTOGRAPHING WITH 400 ASA FILM pdf

I have recently taken up a hobby of photographing bands. I used fuji superia press film, and had pleasing results but wondered if this is better than a film I found called Fuji Superia x-tra.

Pink Floyd the Wall Letters from Vienna Clinical guidelines in family practice 5th edition Sampling for intensive studies by Barbara M. Wildemuth Leo L. Cao Teaching geography Calculus multivariable student solutions manual 10th edition Do school-to-work programs help the / Art of Courtly Love (Duckworth classical, medieval, and renaissance editions) More Drum Techniques of Rush (More Drum Superstar Series) Every Man in His Humor (Large Print Edition) Zoogeography of Caribbean insects The collected poems of John Masefield. Bingo the black panther Similarities in protein binding sites Hugo O. Villar, Mark R. Hansen, and Richard Kho Diary of anne frank wendy kesselman How Roses Are Increased Elizabeth Cady Stanton and Lucretia Mott, Seneca Falls Declaration The short stories 2d tutorials autocad 2007 Notes of a crocodile Counselling for stress problems Scene 1: Countering objections positively Joomla tutorial for beginners step by step Formulating American Indian policy in New York State, 1970-1986 Can I make a difference? : the battle for change. Letsvisit New Guinea The successful students guide to college for Morgan State University The Good Housekeeping Step-by-Step Great Main Dishes The Abundance Principle Two 60-Minute Audio Tape Series (Biblical Finance Series) Delectable selectables Social studies worksheets 4th grade Corrective reading techniques for classroom teachers Vital Records of the Greenbush Reformed Church V. 1. Sand-grouse, partridges, pheasants Syllable structure and syllable-related processes in German Lurzers Archive Special Catalogs Brochures 1 Fundamental Processes in Ecology Beagle training basics Introduction, a general sketch of Hazlitts life and writings. Texas is the issue