

## Sports Photography Equipment



In professional Sports Photography it is not just having skill in taking a photograph it is also about having the right equipment. To photograph different sporting actions requires different cameras and lenses if you have any chance of catching that perfect sports picture.

Another factor is it does not matter how much equipment you have it takes time and skill to become a good sports photographer. Some people like in any job have a natural ability to take the perfect shot. On "Sports Pictures" we have included lots of information listing some of the best websites on the internet covering all you need to know about sports photography.

Everyone wants digital images and this equipment is quite expensive, as you need different camera's and lenses depending on what type of sports you are photographing. To photograph fast moving sports images you will need a telephoto lenses. At night games or indoors you will need fast lenses with large apertures that let in a lot of light.

To shot football, baseball, and soccer you will need at least a 300mm f/2.8 lens. In using a 35-70 f/3.5 - 4.8 zoom lens that is found on a lot of cameras is not suitable.



Many professional sports photographers have the following set of equipment:-

- 2 top-of-the-line digital camera bodies, such as the Canon Eos 1D Mark III 20.1MP cost US\$6700 or Nikon D3 US\$5500.



- Extreme Wide Angle 14mm f/2.8
- Wide Angle Zoom Lens 16 - 35mm f/2.8
- Fast Short Telephoto 85mm f/1.4
- Telephoto Zoom 70-200 f/2.8
- Fast Telephoto 300mm f/2.8
- Fast Long Telephoto 400mm f/2.8
- Teleconverter 2x
- Teleconverter 1.4x
- 2 Monopods
- Tripod
- 2 Flashes
- Radio Remotes
- Radio Remotes
- Light Stands, Umbrellas, Lighting Equipment
- Laptop with Extra Ram
- Photoshop
- Rolling Camera Case
- 6 Extra Batteries

**Total: US\$38,000+**

It is not just the camera you use though making sure you use the right lens. Many professional sports photographers shoot 90 percent of their work with a 400mm f/2.8 and a 70-200mm zoom and two bodies:-

**Baseball:** 400mm, 70-200mm

**Basketball:** 70-200mm, 16-35mm

**Football:** 400mm, 300mm, 50mm

**Canon EF 400mm f/4.0L USM SLR Lens**



The new Canon 400/4.0 EF-L DO IS is a very high-quality image stabilized lens. Ideal for professional sports photographers and outdoor shooters. It has a length (9.32") is 26% shorter than other lens in its class. It weighs (4.3 lb) about 36% lighter than other lens in its class. Small and light are of course relative to out lens. Anyone used to shooting with a Canon EF 28-135mm IS Lens will regard the Canon EF 400mm f/4.0 DO IS USM Lens as being large and oversized. But, to someone used to shooting with a Canon EF 300mm f/2.8 L IS Lens, the Canon EF 400mm f/4.0 DO IS USM Lens will feel a lot lighter (4.3 lb vs. 5.6 lb / 1,940g vs. 2,550g) and definitely more easily to manage. Against other lenses in its class the new weight is an advantage. The difference between it and the 300 f/2.8 feels even bigger than the 1.3 lb (610g) spec difference indicates.

The main technical breakthrough in the multi-layer diffractive optical lens technology provides superior super-telephoto performance in a smaller and lighter design. There is enhanced correction for chromatic aberrations. Image Stabilization system gives the equivalent effect of a shutter speed two stops faster. Built to Canon's professional standards with fast AF, full-time mechanical focus and dust and water-resistant construction. Aspherical effect corrects for spherical and other aberrations, for high resolution and contrast of the image

## **Sports Photography Equipment**

Cameras photography is dominated by digital. There are two basic types: Digital Single Lens Reflex (DSLR) cameras with interchangeable lenses, and point-and-shoot snapshot digital cameras that do not have removable lenses.

### **Snapshot Digital Cameras – Sports Photography**

The problem with snapshot type cameras are difficult to use for sports photography, because of the time lag between the camera focusing and the shutter opens. It is very difficult to shoot sports pictures and sports action with these cameras. The other main drawback is these cameras are not very good in low light conditions because they have very small pixels which often cannot collect the required light levels and consequently suffer from high noise.

In sports like baseball and football Snapshot cameras built-in zoom lenses cannot cope with pictures that require long focal lengths. Hence the need for cameras with different lenses in sports action pictures. ISO noise performance and light is the main killer in these cameras for sports images. In most cases the sports photos taken by professional sports photographers found on this website have to use DSLR Cameras.

### **DSLR Cameras- Sports Photography**

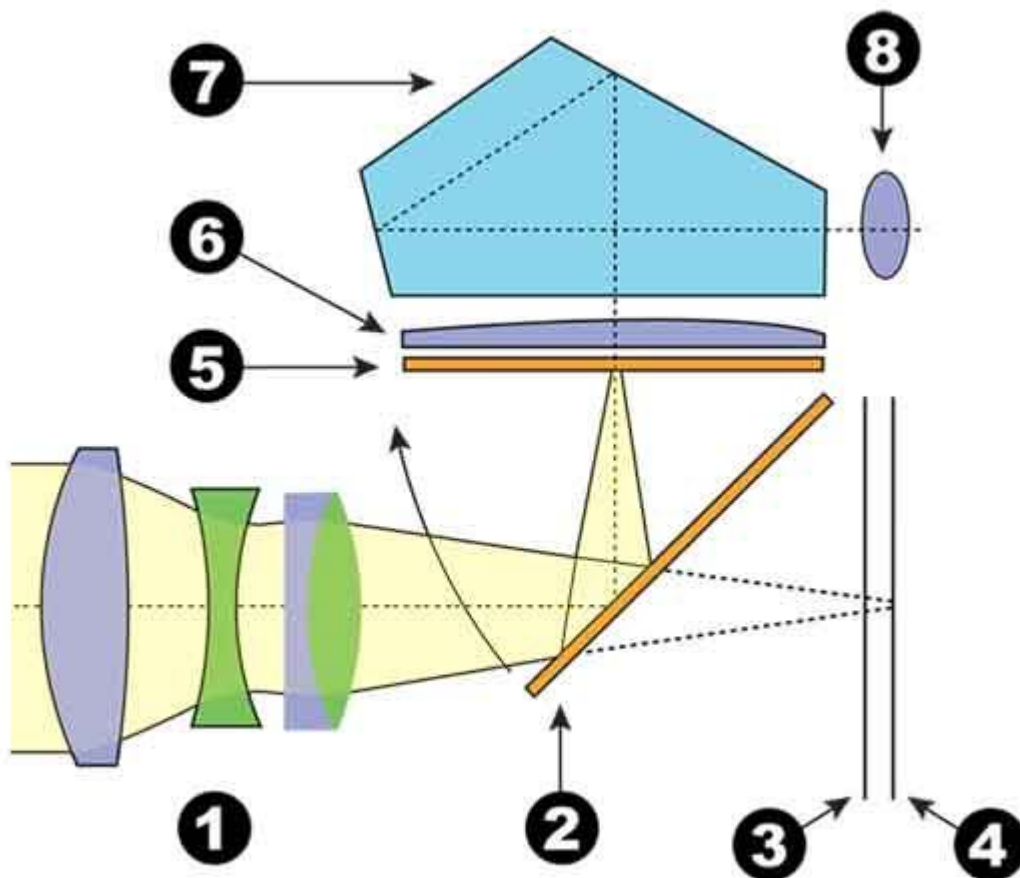
A digital single-lens reflex camera (digital SLR or DSLR) is a digital camera that works on the principle of an automatic mirror system and pentaprism or pentamirror to focus light from the lens through the viewfinder eyepiece.

The advantage of a DSLR Camera in sports photography is the mirror reflects the light coming through the attached lens upwards at an approximately 90 degree angle. Light is then reflected by the pentaprism to the photographer's eye. When sports action pictures are taken the mirror swings upward, and a shutter opens, allowing the lens to project light onto the image sensor.

This is important as when shooting indoor sports photography and in low light levels light is the vital ingredient to reduce noise and light levels in a shot. In most other respects, a DSLR is similar in principle and operation to a standard (non-SLR) digital camera.

Basic Camera DSLR design principles.

### Cross-section view of SLR system:-



- 1 - 4-element lens
- 2 - Reflex mirror
- 3 - Focal-plane shutter
- 4 - Sensor
- 5 - Matte focusing screen
- 6 - Condenser lens
- 7 - Pent prism
- 8 – Eyepiece

The latest Canon 40D Canon EOS 40D 10.1MP Digital SLR Camera costs \$1,329.88 on Amazon.com in March 2008. A Nikon D300 produces very good sports photos. An ideal intermediate camera to take sports pictures is a Canon 350D could be purchased at Amazon.com for \$469.99 for the body only. What you will find is the latest DSLR cameras will produce better images though the key is deciding if an older model will give you the results you require in digital format to be loaded straight into your computer. It's not just the Camera its also have the right lenses to go with each type of sports shot you wish to photography.

The advantage is that there is no time lag in the image; it is always correct as it is being "updated" at the speed of light. This is important for sports photography or any other situation where the subject or the camera is moving too quickly. This improves the "resolution" of the sports image that is much better than that provided by an LCD display or an electronic viewfinder.

### **DSLR Lenses – Sports Photography**

The ability to exchange lenses, to select the best lens for the current photographic need, and to allow the attachment of specialized lenses, is a key to the popularity of DSLR cameras. In sports photography shooting different sports requires different lenses depending the position and distance from the subject.

DSLR Lenses that have an 18mm to 55mm zoom have a low focal ratio causing problems in shooting many sports. It costs around \$119.95 dollars for a Canon EF-S 18-55mm f/3.5-5.6 II Lens on Amazon.com, though it not ideal for top quality sports photography. You get what you pay for if you have that chance of that brilliant hard to achieve sports picture. To shot top quality sports images a Canon's top of the line lenses, such as the L series 16mm to 35mm f/2.8 zoom is, an ideal choice the problem is it costs \$1,378.98 from Amazon.com in 2008.

The key to obtaining the best images in sports is to have a range of Interchangeable lenses for SLRs and DSLRs. A photographer will often use lenses made by the same manufacturer as the camera body (for example, Canon lenses on a Canon body). The key is making sure you use the right lens for the sport image being shot.

## Sports Photography Lens

When shooting football, ideally you will need a lens that is at least 200mm to 300mm in focal length. Taking football images at night, it is impossible to get around the fact that you will need a fast telephoto lens with a minimum aperture of f/2.8. The reason for this is you need a camera that has the ability to deal with low light levels. In lots of cases a fast focal ratio of f/2.8 might not be fast enough as the shutter speed to stop the action and reduce the noise at a high ISO.

Where expensive DSLR Cameras and Lenses come into their own they can deal with all the above problems in shooting sports. The latest cameras such as the Canon 1D Mark III or Nikon D3 are ideal for sports photography. These cameras have exceptionally high ISO noise and you can use them at ISO 3200 or even 6400 when the light is really low in a sports hall or shooting sports at night to achieve 1/500th of a second at f/2.8.

The key thing to remember is you often get what you pay for in buying camera equipment for sports. These cameras have the latest technology, and usually the best noise performance. For sports photography at the highest level this can make all the difference between achieving that perfect high quality sports image. If you have a large budget a 50mm f/1.8 for indoor basketball and also study fast high-end zooms with a minimum fixed aperture of f/2.8.



Camera wise if you have really wished to have the right equipment buy a high-end DSLR like a Canon 1D Mark III or Nikon D3. This will need a fast wide-angle 16-35mm f/2.8 zoom, a 70-200mm f/2.8 zoom, and a fast super-telephoto lens like a 300mm f/2.8 or 400mm f/2.8 for football, lacrosse or soccer.

### **Expensive High-End Equipment suitable for Sports Photography**

- Canon EOS 1Ds Mark III 21.1MP Digital SLR Camera (Body Only) is \$6,549.88
  - Canon EF 85mm f/1.2L II USM Medium Telephoto Lens is \$1,860.35
  - Canon EF 70-200mm f/2.8L USM Telephoto Zoom Lens is \$1,190.00
  - Canon EF 16-35mm f/2.8L II USM Ultra Wide Angle Zoom Lens is \$1,450.00
  - Canon EF 70-200mm f/2.8L IS USM Telephoto Zoom Lens is \$1,699.00
  - Canon EF 400mm f/2.8L IS USM Super Telephoto Lens is US\$6,800.00
- Total Cost \$19,549.23**

### **Mid-Level Equipment suitable for Sports Photography**

- Canon EOS 40D 10.1MP Digital SLR Camera (Body Only) is \$869.95
  - Canon EF 85mm f/1.8 USM Telephoto Lens is \$355.00
  - Canon EF 70-300mm f/4-5.6 IS USM Lens is \$549.00
  - Canon EF 17-40mm f/4L USM Ultra Wide Angle Zoom Lens is US\$700.00
  - Canon EF 300mm f/4L IS USM Telephoto Lens is \$1,202.70
- Total Cost US\$3,676.65**

\* Prices as of 27/01/2009 Amazon.com

### **Sports Photography Techniques**

Every sport requires a different technique to capture the action. This may involve focusing on a fixed point (such as a basketball hoop), or focusing on key players in a team. Listed below are some techniques for popular sports photography.

#### **American Football Photography**

Football pictures are easy to shoot as plays tend to follow predictable patterns and even a novice can anticipate where the action will be likely to occur. For example, a 3<sup>rd</sup> down with 1 yard to go is likely to lead to a running play so you should focus on the offensive line area. It is easy to take action shots in this sport, so it is unlikely you will need to take any safety shots.







The best all-round lens to use is a 300mm F2.8 for general shots. However, a 600mm lens for plays at the far end of the field may be more suitable.

## Soccer Photography

The main advantage in shooting football is you can get some exciting action shots with faces and just as importantly emotion. Safety shots include throw-ins and players dribbling, penalties, free and corner kicks and goal kicks.

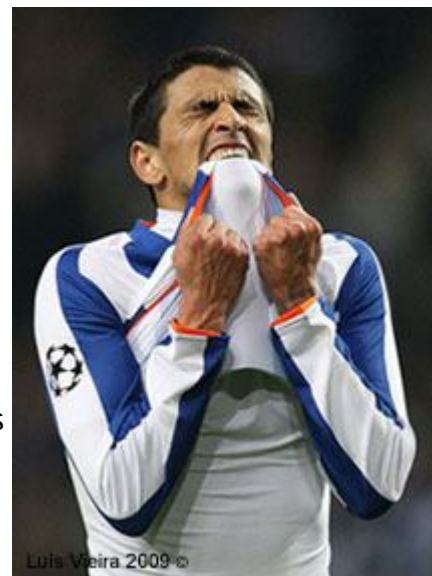


Once you have your safeties you can focus on photographing goal attempts and saves. The big problem of focusing on these shots getting the right shot that is commercial you need a lot of luck and skill guessing on timing.

Unlike other sports, soccer requires 90 minutes of concentration from the photographer because very often the results of a match are decided in a split second of time. And you have no second chance to capture the concluding sports shots of the match. Location, preparation and anticipation (and luck, of course) is vital do get "the shot". Knowing the players, guess their moves and reactions is also vital to get good photos that tell the story of the game.

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In big competitions scenarios (as it happens with other sports) location is even more important because the space available to work is very restricted, so the choice of position you make before the game can be decisive for getting (or not) the shot you need at the end.

The 3 lens best for soccer photography: 400mm/2.8, 70-200/2.8 and 16-35mm/2.8 (this last lens is only used when the players come to celebrate a goal near to the photographer - and when that happens, that can produce great pictures). A remote behind the net with a wide angle is also a plus.

## ***Basketball Photography***

Basketball is the simplest sport to take pictures of. You are focusing on two objects (the nets) where the action often happens. The shots to look out for are jump shots, lay ups, free throws, blocks, dribbling, and defence. Sports photographers tend to focus on the nets for the best action and face shots. If you are positioned along the side of the court, you can follow plays or if you are on the baseline, focus on a particular zone such as "the paint". The best safety shots are players dribbling or looking to make free throws. In some cases it is possible to get tight group pictures of players.



In most cases you can shoot basketball action with a 50mm and 135mm lens, with 85-105 being optimal. This allows you to shoot the player mid-court. For shots involving the far basket a longer lens will be required. In these situations a fast lens, like a 85mm F1.4, can deal with most basketball shots.



Gym lighting causes many problems for sports photographers. Camera settings and flash settings must be adjusted to reduce photographic noise and improve undesirable lighting. The most popular images are of players taking jump shots; they almost pause at the top of their jump enabling the photographer to capture dramatic moments in the game.

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## Baseball Photography



Baseball is one of the hardest sports to take pictures of, as the bigger the game the further away from the action you will be. To overcome this, try and get as close to the action as possible and if you're seated a long way from the action use a long lens. Focus on a player's face, and try to ensure you get the baseball in the photograph, as these are the most popular shots. If you are too far away to take a good picture during the game, take some shots of the players during the warm-up.

Taking good pictures of night games can be very difficult. You should focus on those players nearest to you and those standing in the most light. Having a camera with a fast shutter speed will also help to improve your pictures.

For day games, a 200mm lens should be fine if you are sitting in the stands and concentrate on sunny areas of the field. However, this lens type tends to have a slow shutter speed, so professionals tend to use a 300mm lens.



## *Ice Hockey Photography*



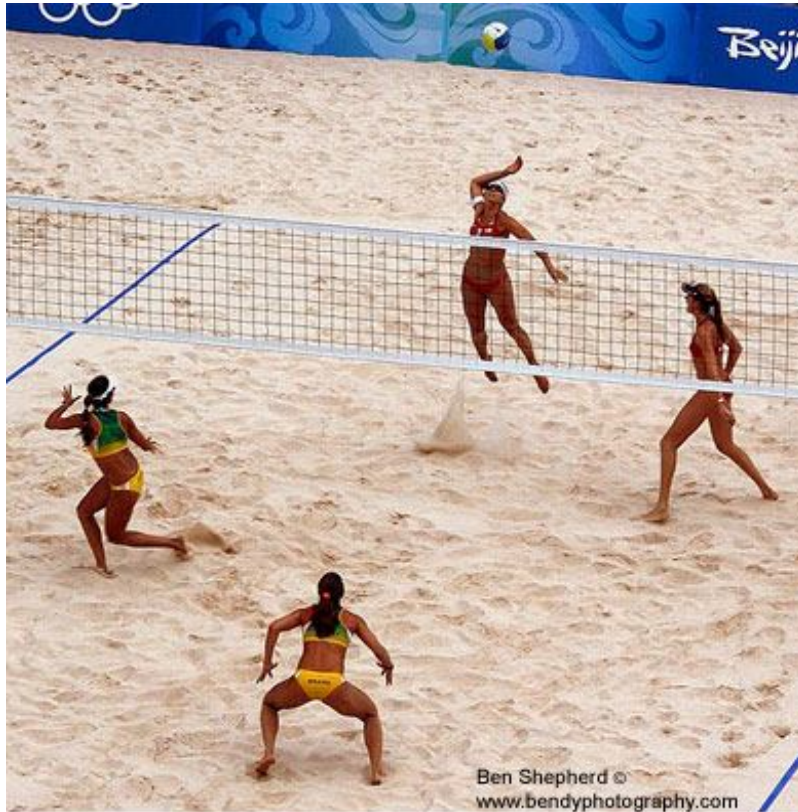
Ice hockey is a fast and frantic sport, which means that there is little time to focus your camera and take a photograph. For this reason, it may be best to stick to safety shots such as goal celebrations, face-offs and players in the sin bin.

There are two big problems with taking photographs of ice hockey. Firstly, there are large sheets of Perspex or glass that surrounds the rink. You need to ensure that the camera is focusing on the action beyond, and may need to turn off the Auto-Focus feature to achieve this. Secondly, because the arenas tend to be badly lit the rink may appear blue or yellow in colour. One option is to take your photographs and correct the colouring using software afterwards if necessary.

Hockey rinks are fairly small so an 80-00mm lens is suitable for taking action shots anywhere on the ice rink.



## Volleyball Photography



Volleyball comes into its own due to its potential for dramatic pictures. However, it is not the most popular sport for commercial photography, and is often overshadowed by beach volleyball pictures.

The key to volleyball photography is manual shooting, i.e. not using the Auto Focus function that most digital cameras have, as the camera tends to focus on the net rather than the players.



To be successful in volleyball photography it helps to have played the game or studied the sport to know the strategy to anticipate what will happen.

The lens you will need if you are on the side of the court would be a 28-70 2.8 wide open, you are best to focus on the DS's while action is going on at the net. The key is when the opposing team set for a kill, to note quickly where the set is being placed. If it's one of the OH's (left or right), you need to focus on the opposite or middle DS for a dig shot. If the action is in the middle, focus on the strong side DS for a dig.

To shot good volleyball pay attention to the setter and how/where they place their sets. Study the setters to gauge the good from average setters based on how well the OH's or MB's hit their kill shots. If you pay attention to hitter's and setter's call signals, you'll pick up what play they're about to do.



## Track and Field Photography



Due to the size of an athletics stadium, it is unlikely that you will be able to take pictures of all events. Focus on those events that are closest to where you are positioned to ensure that you get the clearest shots.

For track events, the most important picture to take is that of an athlete crossing the finish line. This can be extremely difficult, so take safety shots of the athletes before they start, or when they are about to begin the race.

Field events tend to be easier to take photos of as the athlete has two or three attempts. Focus on the main area of action, such as just before the sand pit for the long/triple jump, and take several shots in rapid succession as the athlete jumps.

## Golf Photography



JMP Photography ©

In theory golf photography is easy to shoot; nevertheless the sheer size of a professional golf course limits your choices. In short you can only cover a very small fraction of a tournament. As a golfing photographer you have two options, set up base on one hole and shoot multiple players as they come to you, or follow a key player. Whichever option you chose, you'll have to understand the actual course you are shooting on, otherwise you are unlikely to pick the best positions to photograph from.

The main action shots to get are back-swings and near contact action between golf ball and club. Safety shots can include just about anything on the course, from crowd shots to pictures of the scorecard.

Professional golfers are very sensitive to sound and movement, so take the picture using a silent manual mode rather than Auto-Focus.

## ***Motorsports photography***

Motorsports photography can be very easy to shoot. Regular and predictable vehicle movements around a racing track give plenty of opportunities to take photographs. Photograph opportunities can present themselves at all stages during a race meeting. Photo opportunities include car line-ups on the starting grid, key slow corners, popular overtaking places and pit action, to name but a few.



Panning is a good technique for capturing motion with all types of motorsport. The trick is to pick up the motor vehicle before you want the shot, turn smoothly (whilst keeping the motor vehicle in the same place in the viewfinder window) and to then squeeze the camera button during the panning sequence.

More picture blur gives the impression of more vehicle speed. The slower the camera shutter speed, the more blurred the background will appear. However the slower the shutter speed, the bigger the risk you take blurring the motor vehicle too! Plenty of practice and experimentation is the key.

## Sports Photography Tips

### Nine Elements Required To Create Sports Photography

1. **Plan** – In any photography you have to plan what type of sports pictures you wish to take depending on the sport being shot. In taking pictures of any game that is defined by boundaries. These include tennis match, football, soccer, rugby, hockey affect where you need to position yourself. In other sports such as triathlon, road cycling race means you have to work out the best locations and how to be at the right location at the right time.
2. **Talent** – Having natural talent behind the lens can be learnt though some people are naturally gifted. You either have this ability or you don't. If you are not naturally gifted, it can be learned to a large extent be learned with hard work and determination.
3. **Knowledge** – Unless you understand the sport you are photographing this affects your photographic results. Then there knows inside out how your camera works. In sports photography you need to know almost instantly how to change the settings on your camera to achieve the perfect still image as you do not have time to look at a manual. The next most important thing anticipating the likely outcome of a sporting event. There is not point focusing your lens in the wrong place. From a mental point of view you must know game situation and what's going to happen.
4. **Ability** – This can be learned with time as like anything the more you practise the better you become.
5. **Equipment** – Camera movement is one of the main factors in destroying sports images. In most cases you can hold the camera in the right position though not always, which is why professional photographers normally shot on Tripods and Monopods.
6. **Desire** – To be successful you have to want to take that perfect shot. You cannot afford to get complacent and need to be ready whenever the action occurs. The best shots have action and emotion all together.
7. **Practice** – To be good at anything you must practise and this includes Photography.

8. **Chance** – The only way to be able to take sports pictures into actually be there when the action is happening. It helps to be in the right position when you are trying to get that photograph. If you cannot shot the sport you wish learn on one that you can find action and achieve the desired result.
9. **Luck** – In anything we sometimes get lucky taking photographs. The key is being prepared to improve your chances.