(This whitepaper was ghost written for someone else, a common PR practice.)

Lenses Fuel Mobile Truck Business

Selecting the Right Lenses for Mobile Video Units

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In producing live sports or entertainment shows, one of the most critical factors impacting the production is the broadcast lens. The image quality, durability, operational features, and lens types work together to ensure the success of the telecast and the quality of the viewing experience.

Owners of truck companies give a great deal of thought to their lens selection strategy because the right brand and complement of lenses will attract new customers and encourage return business; while the wrong lenses will cause them to have second thoughts about booking your mobile unit.

While broadcast networks and production companies tend to choose their lens supplier very carefully, most believe that the popular brands have what it takes to serve their needs—covering sports and entertainment events with utmost quality, service, and reliability. Without these qualities, a lens manufacturer can't even ante into this high-stakes game.

When choosing lenses for use on a mobile video unit, the main issues to consider are customer service, lens assortment, operational features, and rock-solid performance.

Customer Support

The effectiveness of the manufacturer's technical support is arguably the most critical issue to consider when choosing lenses for a mobile unit.

Sales representatives from lens manufacturers strive to foster strong, long-lasting relationships with their customers. When the show starts at 8pm and a lens isn't working right, there's no way to fake it. Mobile truck owners get on the phone and call immediately for tech support, and the issue must be resolved.

These situations that test the metal of the relationship. And it's one of the main reasons why we see repeat business from many prominent truck companies. In those rare instances when a lens failed, a call produced immediate results—a quick turnaround on service, the issuance of a loaner lens, or both.

Lens Assortment

Identifying your market and the type of lenses your customers expect to use is the second step in selecting the right lenses for a mobile unit. Mobile units are a unique application because they are severely restricted in terms of total vehicle weight and space, so determining exactly which lenses you need to have onboard is judicious.

Broadcast lenses are not cheap. And you're not buying just one lens. Typically, on a 53-foot expando-- that will see a lot of action covering network sports--you're looking at stocking a half-dozen lenses minimum, and for some events, in excess of 20 lenses.

Today's sports networks, such as CBS Sports, FOX, ABC/ESPN, Turner Sports, and others need to capture all the action in any game--from the Super Bowl to college sports. For the most part, their migration to HDTV production is virtually complete. As a rule, they seek out native HD trucks and require top-quality HD lenses.

Trucks catering to the high-profile sports network typically carry six to eight "big box" telephoto lenses, such as Fujinon's XA101x8.9 super telephoto field lens, and XA87x9.3 telephoto lenses, both of which can reach across the playing field and zoom into a player's face, zero in on the touchdown, or even some spectators on the other side of the stadium.

The lens package will typically include four or five ENG/EFP style lenses, such as a 22x, for use in stand-up interviews, roving camera shots in the stands or on the stage, and to capture shots that are otherwise difficult to get—like standing near the inside lanes of the race track to capture cars as they come zooming around the bend.

Since the number of lenses a truck can physically carry is restricted, versatility can be an asset. Fujinon's newest lens, the XA88x8.8, is unique in that it offers both a telephoto zoom capability along with the widest wide angle of any telephoto lens on the market, enabling it to serve multiple purposes.

Other lenses often chosen would be a good wide angle lens such as the HA13x4.5 series which is ideal for close-up work, jibs or Steadicam; and a few smaller, low cost lenses (with an 18:1 or 20:1 lens) to aim at the scoreboard or game clock, to affix to goal posts, to put on CableCam systems, or to put onto "bucket" cameras. Remote control is especially important to have on lenses and cameras that are placed in unmanned positions that are not readily accessible.

Trucks are often designed and built for either sports or entertainment applications. For example, a truck may be built just to serve a specific package of games for one particular sports network—like Sunday Night Football for ESPN. Or a truck will be designed to cover productions such as the Grammies or Academy Awards, or a special event at the Kennedy Center for the Performing Arts.

In many cases, truck owners want the flexibility to serve either the sports or entertainment market to keep their trucks booked and on the road year-round. While entertainment and sports shows can employ the same type and sizes of lenses, the mix may differ depending upon the production style and shots the director wants to get. Also, in entertainment shows, lenses may be used on jibs, cranes, and Steadicams to get the right shots.

Operational Features

Fujinon's next-generation broadcast lenses are very sophisticated, computerized devices that are rich with features, yet very user-friendly. Whether it's a freelance crew or a crew that is dedicated to following a particular sport, camera operators all need easy access to operational controls, even with gloved hands.

On big box lenses, camera operators spend their time peering into the viewfinder. If they can't feel the controls with their hands, having a digital display in the viewfinder that indicates the status of every feature is not only convenient, it's indispensable. They can see if the Image Stabilization, Precision Focus, 2X Extender, or other features are on or off; as well as the position of the zoom, , focus, and other imaging parameters.

For sports, camera operators can find it difficult to keep the image steady, especially when they're zoomed all the way in on a big box lens weighing 50 to 60 pounds. Scaffolds and camera towers are known to shake and sway. Excited spectators often jump up and down in the stands causing movement. Even high winds can affect the image stability. So for this reason, it pays to have Image Stabilization on lenses, especially on big box 101x, 87x and 88x HD lenses.

Precision Focus Assist is a feature that is catching on because it enhances the operator's ability to keep a moving subject in focus. Whether they want to follow a race car traveling at 200mph or a golf ball rolling on the green towards the cup, Precision Focus will zero in on a particular subject and keep it in focus automatically with push-button ease. Servo Zoom and Servo Focus are features that are especially beneficial in High Definition where accurate zoom and focus are critical.

All large lenses incorporate a 2X Extender. The 2X Extender is a feature that is a must-have for sports. The 2X Extender doubles the focal length of the lens. So, if it's a 100mm lens, the 2X Extender would make it a 200mm lens. The compromise is that the 2X Extender also doubles the light loss, so it is not always the correct choice for low-light situations.

It's also beneficial to have an RS-232 (computer output) port on the lens which enables the lens to interface with all types of devices. One application for which this feature is growing in popularity is the Sportvision "First and Ten" marker, which superimposes a bright yellow line to illustrate where the first and ten is on the field to enhance viewer enjoyment of a football game. Many sports are also using Orad's Virtual Advertising solution which keys images right onto the playing field in a way that makes them look like physical signage.

Performance

It goes without saying that broadcast lenses for live sports and entertainment shows must have superior precision glass. Images in High Definition show so much more information than ever before and any aberration caused by the lens can be very distracting. F-stop ramping or the ability of a lens to produce a consistently bright image even at the extreme telephoto end of the zoom range is additionally important.

They must also be extremely rugged and roadworthy. Lenses on trucks are often put on cameras, removed, packed into cases, put into the belly of the truck, and driven countless miles—with this process repeated on a regular basis.

Lenses must also be durable enough to withstand extreme temperatures, and even go from running in a heat wave one day to working through an ice storm the next. In order to reduce maintenance and fogging problems Fujinon features a desiccant package that fits into a compartment on the lens which wicks away moisture and fog while the lens is being focused.

Protecting a lens from moisture and dust requires constant vigilance, but doing so will ensure that the broadcast lens will be operational, and maximize profits, for 10 years, and beyond.

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