

Media Information

August 25, 2010

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RED BULL STRATOS TEAM PROVIDES FIRST LOOK AT CAMERA SYSTEMS THAT WILL RECORD AND BROADCAST FELIX BAUMGARTNER'S MISSION TO THE WORLD

Team faces immense challenges to provide real-time images that will advance science and thrill public

Lancaster, Calif. – August 25, 2010 – Today the Red Bull Stratos mission team provided a first look at the custom camera systems that will record and broadcast Felix Baumgartner's stratospheric mission in real time and high definition.

The details, announced at capsule manufacturing facility Sage Cheshire Aerospace, reveal that capturing a potentially supersonic freefall from the edge of space may be one of the most complex elements of the Red Bull Stratos mission. But with in-flight cameras mounted on both the capsule and Baumgartner's space suit, the unique setup holds potential to provide an almost first-hand perspective of what it's like to bail out in near space and freefall 23 miles above Earth.

When current record-holder USAF Col. (Ret.) Joe Kittinger jumped from 102,800 feet (50 years ago this month), his team used spring-wound motion picture cameras warmed by hot-water bottles to document his freefall. Red Bull Stratos will use high-definition video cameras and ultra-high-definition 4K digital cinematography cameras so powerful that the challenge will be keeping them cool in an environment where the air is too thin to wick away their prodigious heat.

Ken Arnold, the man who engineered Kittinger's Project Excelsior camera systems, remembers those pioneering jumps vividly. "I look at the pictures quite often and the one that I'm most proud of is the one where he goes out the door," Arnold says, citing a heart-stopping shot of Kittinger's lone form dropping into the void. He adds, "[The cameras] showed us very definitely what happened."

Like Arnold, Jay Nemeth, the Red Bull Stratos Director of Photography and founder of FlightLine Films, is keenly aware that the mission camera systems he has developed hold responsibility for providing research data. He notes, "The better the quality of the images, the more we give the scientists to look at later and analyze – the little nuances and details that are essential in understanding something that's never been done: a man breaking the sound barrier with his body."

Nemeth also acknowledges that the complexity of the Red Bull Stratos system is a "double-edged sword," saying, "We will get much more vibrant footage, more angles, more coverage; but we also have to cover more failure modes – there is much more to go wrong."

Capsule Camera System

The Red Bull Stratos team of world-leading production experts has equipped the capsule with nine high-definition cameras, three 4K digital cinematography cameras and three high-resolution digital still cameras. Of these, four are space-rated units attached to the exterior base of the capsule. Another eight are in pressurized housings also on the exterior of the vessel – the housings are designed to protect the sensitive cameras they contain from the near-vacuum air pressure, ice and extreme heat of the stratospheric conditions. The remaining three cameras, although positioned on the interior of the capsule, are space rated to withstand the atmospheric extremes once Baumgartner depressurizes the capsule to step out. And supporting all this is a pressurized electronics "keg" that contains approximately two

miles of wiring. The ensemble capsule camera system will allow Mission Control to monitor the ascent visually for any signs of pilot decompression sickness or other safety hazards; record all activity for the benefit of future scientific research; and provide viewers of the worldwide broadcast with perspectives of the capsule, the skyscape and Baumgartner himself.

“We have basically created a flying video production studio,” says Nemeth. “The cameras are remotely controlled from a station in the Mission Control Center, where camera settings can be adjusted and different angles can be chosen for downlink to flight controllers as well as live TV broadcast and webcast viewers at home.”

Recognizing that a single image can crystallize the power of a moment, the Red Bull Stratos team has made still photography a priority as well. “There’s an iconic shot of Joe Kittinger on the cover of LIFE magazine that shows him freefalling against the background of a cloud bank about 15 miles below,” Nemeth marvels. “It was taken by an automatic camera mounted on the gondola by National Geographic, a 35 millimeter that was cutting-edge at the time – but it used film; it wasn’t digital. We’re so lucky that image survived the journey.”

Adventure sports photographer Christian Pondella, who was brought in as a consultant early in the still camera system’s development to provide input on lenses and camera mount positions, opted for still cameras with small bodies yet large resolution, and suggested a 14mm wide-angle lens to capture Baumgartner’s exit from the capsule, as well as a 64-gigabyte flash card that has a high rate of speed in addition to high capacity. “In my mind I’ve got a vision of an image showing the capsule in one-third of the frame, with Felix dropping away and the Earth below all visible. But there’s a lot of luck involved,” Pondella says. “It’ll all come down to how the balloon and capsule happen to be positioned at that moment.”

Suit Camera System

Some of the most dynamic images will be those captured from Baumgartner’s point of view on his descent. Three small high-definition video cameras will capture three angles of his descent back to Earth. Baumgartner will activate these suit cameras himself, just before he jumps, and, like Baumgartner, they must be able to function in near-space conditions for up to 20 minutes, as well as at the extremes of supersonic speed. Furthermore, the cameras must provide useable shots regardless of Baumgartner’s orientation: Baumgartner will wear small HD video cameras with opposing views – one on each thigh – plus a camera on his chest pack that will provide a view of his helmet visor.

Luke Aikins, the Aerial Strategist for the Red Bull Stratos team, has skydived with Baumgartner on numerous test jumps, filming the descents. “We’re being careful to make sure that the suit cameras won’t affect Felix’s freefall,” Aikins reports. “After the mission is over, the team will be able to study his footage and come up with ideas to help people in future endeavors – we hope to see details like what went on with his body position, and even with the fabric, in a way that might be impossible for Felix to perceive.”

“Ultimately, from the time we seal the capsule until I set foot on Earth again, I’m going to be alone,” Baumgartner states. “But thanks to these camera systems, at least I’ll have the reassurance that the mission team should be able to monitor what’s going on visually as well as via radio, and in my mind I’ll know that people all over the world are sharing the experience with me.”

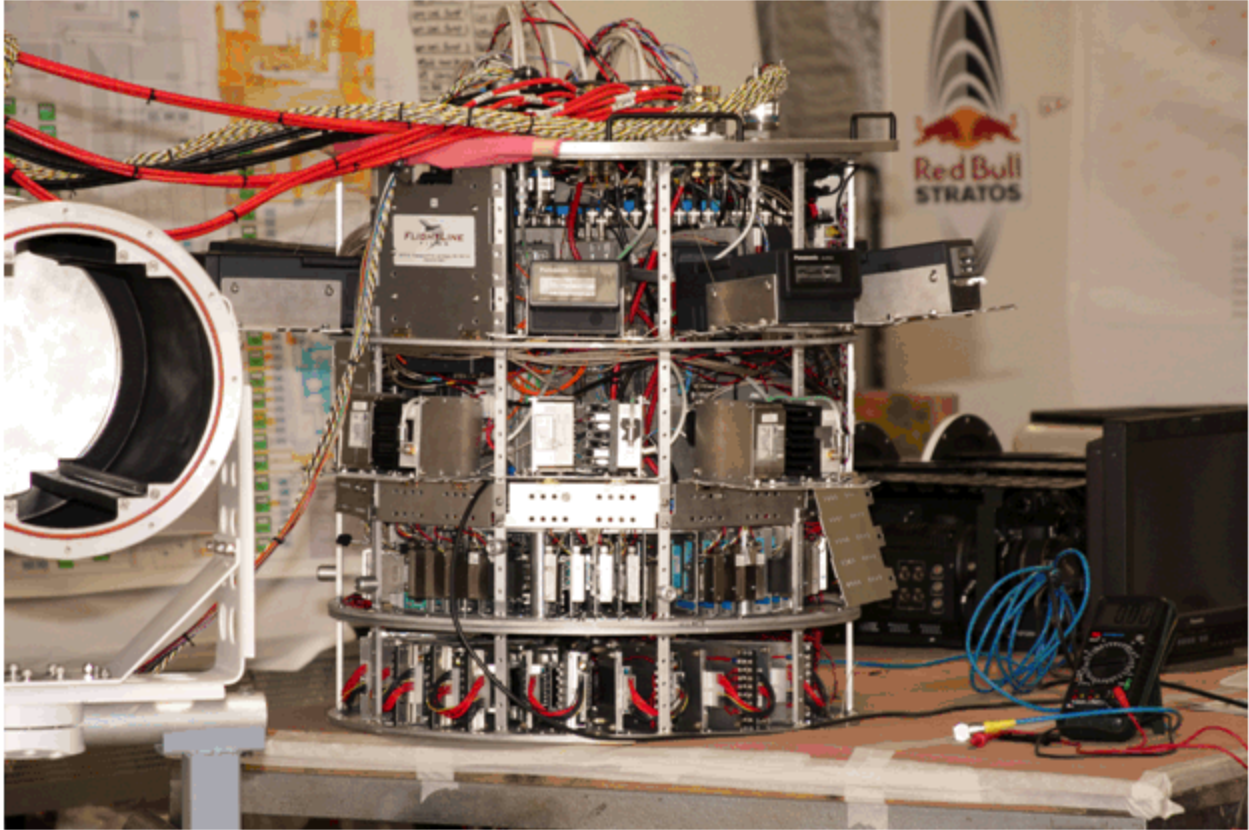
LIVE Red Bull Stratos Broadcast and Webcast

On the day of Baumgartner’s jump, Red Bull Stratos, along with web partners, will provide a LIVE television broadcast and online stream of the activities and stories surrounding his ascent and descent. The final launch date, location and live stream details will be announced in the coming weeks on www.redbullstratos.com, on Twitter (@RedBullStratos), and on Facebook (<http://www.facebook.com/redbullstratos>).

Some Quick Facts on the Red Bull Stratos In-Flight Camera Systems

- There's approximately two miles of wiring in the pressurized "keg" that supports the Red Bull Stratos cameras.
- The "crush pads" on the base of the Red Bull Stratos capsule are designed to absorb up to 8 Gs of impact to protect equipment including the camera systems – as well as Felix Baumgartner himself should an urgent situation require him to descend in the capsule.
- A typical satellite uplink truck has one or two channels of microwave video. The Red Bull Stratos capsule has three.
- With a combined total of 15 in-flight HD cameras, the Red Bull Stratos capsule and Felix Baumgartner's pressure suit have more HD cameras than most 45-foot television production trucks.
- Special filters are used on some of the Red Bull Stratos cameras because the brightness of the sun is more intense in the upper stratosphere.
- The Red Bull Stratos camera housings are designed to withstand intense heat on the sunny side while sustaining temperatures far below freezing on the shadow side.
- It is anticipated that some of the cameras inside the Red Bull Stratos capsule will be covered in ice when the vessel touches back down on Earth.
- The microphones inside the Red Bull Stratos capsule will record sound only as long as there is air to carry the soundwaves. When Felix Baumgartner depressurizes the capsule (just before he jumps), those ambient microphones in the capsule will stop picking up sound. (This will not, however, affect the microphone in Baumgartner's helmet.)

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This Red Bull Stratos Moving Images main electronics cage houses High Definition RAM recorders, Camera Control Units, Routers, 3 Video Transmitters, Telemetry Computer, and a sophisticated electrical system to power everything.

The cage resides inside a pressurized keg located at the top of the capsule. @FlightLine Films



Still camera and POV camera placement inside the Red Bull Stratos capsule. @FlightLine Films



Still cameras (Inside the pressurized Red Bull Stratos capsule. @FlightLine Films

Mission Background and Partner Information

About Red Bull Stratos

Red Bull Stratos is a mission to the edge of space. Pilot Felix Baumgartner will ascend to the stratosphere in an attempt to launch a freefall jump that would see him become the first person to break the speed of sound with the human body. The data captured by this mission and its team of world-leading scientists promises new standards in aerospace safety, expanding the boundaries of human flight.

About FlightLine Films

Since 1984, Las Vegas-based FlightLine Films has been providing television and motion-picture producers with the highest quality in aerospace cinematography services. The company has pioneered visual documentation systems for the private and commercial space programs advancing into the 21st century. FlightLine offers zero-gravity qualified crews and HD cameras for use in the cold vacuum of space, as well as housings that allow traditional motion picture cameras to operate in that hostile environment. FlightLine Films is designing and building the camera systems to document the Red Bull Stratos mission from multiple perspectives, including ground-based trackers, an airborne tracking system, in the capsule and on Baumgartner's pressure suit. For more information, please visit: www.flightlinefilms.com.

Red Bull Stratos is proud to share this mission with the following partners:

Nokia

As the official global mobile partner, Nokia has developed the Red Bull Stratos application to monitor this groundbreaking project. Available exclusively through Ovi Store by Nokia, users can learn more about the mission's progress by reading articles and watching videos from the Red Bull Stratos team of experts. Nokia users can also follow the countdown, stream the final jump in real time and watch Felix Baumgartner's pulse race by monitoring his biometrical data before, during and after the jump. Once complete, the app will deliver unique content about the Red Bull Stratos mission direct to handset. For more information, please visit <http://www.ovi.com>.

Microsoft

Microsoft is the global media technology partner for Red Bull Stratos. Microsoft's Silverlight and IIS Smooth Streaming technology bring an interactive live experience in High Definition to web viewers worldwide. To learn more, visit <http://www.microsoft.com/silverlight>.

Riedel Communications

Riedel Communications – renowned for its pioneering advanced fiber, intercom and radio technology – provides the entire communications solution for this outstanding project, integrating both wireless and wired digital intercom systems. Additionally, Riedel furnishes the fiber-based video and signal distribution as well as the wireless video links to the capsule's onboard cameras – enabling stunning pictures to be delivered from the Red Bull Stratos capsule. Please visit <http://www.riedel.net>.

Notes to Editors

BBC Documentary

An exclusive, all-access documentary about the Red Bull Stratos project is being produced by the BBC together with National Geographic. A few weeks after the jump in 2010, the feature-length film will premiere on BBC2 in the UK and National Geographic Channel in the US. It will be aired across the rest of the world soon after. The 90-minute documentary about Red Bull Stratos is being globally licensed and distributed to broadcasters by BBC Worldwide.

Broadcasters interested in the BBC documentary should visit www.bbcworldwide.com for more details.

About Sage Cheshire Aerospace

Sage Cheshire Aerospace, Inc., offers the best services of leading technical minds in research, advanced composite design, engineering and fabrication to find solutions for a full spectrum of aerospace needs. Sage Cheshire is designing, building and testing the Red Bull Stratos pressurized capsule. The company also coordinates other vital aspects of the mission, from creating computer fluid dynamics to selecting crews and interfacing with outside agencies. For more information, please visit: www.sagecheshire.com.

For hi-res images, B-roll, web videos and additional press materials throughout the project, please visit: www.redbullstratos.com/newsroom.

Red Bull Stratos content, as well as other Red Bull productions, can also be accessed at: www.redbullcontentpool.com.

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