



International Launch Services

September 7, 2006



Current Campaign

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# ILS Current Campaign Blog - HOT BIRD 8



## Thank You for Joining Us

Congratulations to everyone on the successful launch of Eutelsat's HOT BIRD 8!

Final details of the launch and separation:

- Liftoff occurred at the beginning of the launch window, 4 August, 2006, at 21:48:00 GMT.
- Apogee: 35826 km for 35786 +/- 150 km predicted
- Perigee: 3837 km for 3800 +/- 360 predicted
- Inclination: 13.085 degrees for 13.0 +/- 0.3 degrees predicted
- Nominal separation took place at 6:59:20.4 GMT, on 5 August.

We have enjoyed hosting this blog for our launch campaign — it has been informative and fascinating to watch our team go from leaving our offices here to launching in Baikonur. We appreciate all the extra time and effort they put forth, in addition to their regular responsibilities, to include us in the behind-the-scenes launch campaign world.

For our readers, customers, and colleagues who have followed along, we hope you have enjoyed the journey. This blog, launch highlights and photos will be available online until 18 August.

With the rollout of a new ILS website design in the next month, we also plan to implement new features like a blog photo album in time for the next campaign. Be sure to join us again!

Posted 07 August

[7 comments](#)

Posted By: ILS Communications Team at 11:23, EDT

## Farewell from the HOT BIRD 8 Team!



It's hard to believe that the launch is complete. Sometimes it seems like we just arrived a few days ago and started unpacking! The campaigns are hard work but being a part of such an amazing event is the best reward. No matter how many times you see a launch firsthand, it's always thrilling and awe-inspiring.

It was a beautiful, clear night and the flames lit up the night. The night sky in Baikonur is so pristine. No light pollution. The stars here are the clearest in the world.

Of course, we couldn't have done it without our international teams of dedicated professionals. From the ILS HOT BIRD 8 team, we'd like to thank our customer and colleagues for making this possible — every detail from travel to technical operations to security has been taken care of with great pride and attention to detail.

We are thrilled to have a successful return to flight for Proton M Breeze M. After a long and sleepless night, 9 hours, 11 minutes, and 20 seconds after lift-off, spacecraft separation was confirmed and the HOT BIRD 8 SC was acquired by the Eutelsat ground stations. The Eutelsat team started the process of opening the solar arrays and beginning health checks of the SC, before flying her to her final destination. After having been up all night, we headed back to the hotels to catch a quick nap and freshen up before the post-launch festivities.

We had a very nice dinner. It was a good end to a successful launch campaign. You can see in the online photo album some pictures of the really neat cake that the catering staff made to celebrate our launch.

Hawkeye and Camelita bid each other a tearful farewell after the banquet. Although he is happy to be returning to

Paris and she is excited about going to the United States for the first time, they will no doubt cherish the memories of their first campaign together for a long time to come. And who knows? Maybe someday they'll meet again under the starry skies of Kazakhstan.

Everyone is packing up their respective equipment and heading home. We have the luxury of having an extra team from ILS here for some generic house-keeping functions: inventory and facilities maintenance. We will have their help in closing out our mission, and will be able to go home a day early because of them.

Now it's back home to our families and loved ones for some rest and relaxation before another exciting campaign this fall.

*Photo: ILS HOT BIRD 8 Team – After*

Posted 06 August

[1 comments](#)

Posted By: HOT BIRD 8 Team at 14:39, Baikonur

## HOT BIRD 8 Launch Successful

Proton M Breeze M launch of the HOT BIRD 8 satellite successful.

Visit [the latest press release](#) to view details.

Posted 05 August

[4 comments](#)

Posted By: ILS Communications Team at 14:31, Baikonur

## Successful Liftoff



The Proton M Breeze M successfully lifted off with Eutelsat's HOT BIRD 8 in Baikonur today at 21:48, GMT (23:48, CET, 17:48, EDT). Stay tuned for photos and additional information on the 9-hour mission. Spacecraft separation is estimated to occur at approximately 06:59, GMT.

To view the launch broadcast highlights, click [here](#).

Posted 05 August

[1 comments](#)

Posted By: HOT BIRD 8 Team at 04:09, Baikonur

## ИЛС к пуску готов!

Well, we are T-6 hours and 42 minutes sitting here in the Bunker, looking at the official countdown clock. Today was another great day! The weather was beautiful -- sunny, not too hot, and a nice breeze. Everything is well with the rocket and the SC.

The VIPs arrived here at 15:15 this afternoon. We got them on the bus and zipped them out to the launch pad, where they had a quick photo opportunity before we rounded them up and got them back on the bus.

We went to the last State Commission meeting and gave our "go" statements. Unlike the first one, which is very formal and everyone makes a little speech, the second one is quick. In fact, the only thing we said was, "ИЛС к пуску готов!" That's Russian for "ILS is ready!"

The SC has been in the flight program starting from T-11 hours, and the SC team is monitoring in the control room. The SC external battery charge connectors were disconnected just a while ago, about the same time we were meeting. Now they are working on fueling the LV. This is a hazardous operation, so we are locked into the Bunker until it is completed. The Bunker has its own pressurized air source so that if there are any hazardous vapors, we will be safe.

Now is a long period of time where we just wait. There is some music playing softly on a laptop. The customer is doing some sudoku puzzles. We have plenty of snacks: bread, a meat and cheese tray, some caviar-stuffed shells, candy bars, tea, coffee, sodas, water, cookies, etc. Everything you need for an all-nighter!

*Photo: Eutelsat customer team in the Bunker*



Posted 04 August

[6 comments](#)

Posted By: HOT BIRD 8 Team at 22:12, Baikonur

## Photos Available

Due to popular demand, we have made our blog photos available in a public photo album at Photobucket.com. We invite you to take a look by visiting the [HOT BIRD 8 Blog Album](#).

Posted 04 August

[0 comments](#)

Posted By: ILS Communications Team at 14:09, EDT

## L-1 Day and Counting!

Today we completed a very key hardware rehearsal and physically disconnected and reconnected the external battery charging lines that enter the PLF from the tool door on the side. These connections will be secured for real at around T-7 hours, just before LV propellant load.

We also completed our on-pad interviews for the live broadcast. It was around 96 degrees Fahrenheit (36 degrees Celsius) today, but out there it seems even hotter because the white concrete reflects the sun back at you. The ILS, Eutelsat and Astrium team members who did not get an opportunity to sign the payload fairing while it was in Hall 101 went up the tower and signed it there. It is always a thrill to do so. We can write whatever we want, and many people dedicate their signatures to their family or loved ones.

It is L-1 day and counting. All systems are nominal. Tomorrow is L-0. We call it that even though we will launch early in the morning on Saturday, Baikonur time. Our final day on pad is actually more than 24 hours. Tomorrow we will greet our VIPs, have our final State Commission meeting, and at 03:48 Baikonur local, Aug. 5, we will launch.



*Photo: ILS, Eutelsat and Astrium teams on Launch Pad 39*

Posted 03 August

[2 comments](#)

Posted By: HOT BIRD 8 Team at 17:53, Baikonur

## Hawkeye Holds Court



Hawkeye got a little under the weather. He had been working too hard and not drinking enough water so one of his humps went flat. But through the miracle of modern medicine, he revived quite nicely. As you can see, a glucose drip was in order, though. When Hawkeye's fans heard about this, they all had to come and wish him well. Here you can see him with his adoring harem.

In other news here on the launch campaign, LV testing has been completed successfully, and the combined LV and SC countdown rehearsal was successfully completed today. So far, all is well, and there have been no problems. The weather is good, and we are eagerly awaiting launch.

*Photo: Hawkeye, entertaining well-wishers*

Posted 02 August

[0 comments](#)

Posted By: HOT BIRD 8 Team at 18:08, Baikonur

## Roll to Launch Pad

It is L-4 days. This morning we woke up before the sunrise because we had a bus taking us to Building 92A-50 to watch the rollout of the integrated Proton launch vehicle to the pad. It's a Russian tradition that it always occurs at 6:30 a.m. The sun began to come up around six o'clock and within a half-hour, it was a beautiful rosy dawn. We watched the massive ILV roll out slowly from the Breeze M fueling station. In front of it ran a tiny Transcosmos engine with another engine in front of it to ensure the track was clear.

Afterwards, we went back to the hotel to have breakfast and freshen up before heading to the launch pad to watch the vehicle erection at 9 a.m. We got out to Launch Pad 39 with plenty of time to spare, and watched as they tilted the whole vehicle up into place on the launch mount. It is truly an impressive sight, especially when it is at 45 degrees or so. It takes a very sturdy structure to not warp when under gravity's force like this. Witnessing such a feat reinforces the basic idea that Russian technology and engineering are very robust. If you need a 5-to-1 safety factor, it is usually designed to 100-to-1 or more, it seems.

Now we have completed the radio frequency check to verify that we can talk to the SC with the service tower back. The SC has been rolled forward, the payload fairing air conditioning has been plugged in and started, and the high-rate battery charging lines have been connected for the SC. The Astrium team will work through midnight tonight with the SC and do critical systems tests on the booster.



*Photo: Proton Breeze M vehicle being erected at Launch Pad 39*

Posted 01 August

[2 comments](#)

Posted By: HOT BIRD 8 Team at 17:53, Baikonur

## State Commission Meeting



Photo: From left, Leonid Borisov, HOT BIRD 8 program director, KhSC; Raphael Mussalian, HOT BIRD 8 program director, Eutelsat; Martin Gee, head of satellite engineering and procurement, Eutelsat.

We are rolling the ILV to the launch pad tomorrow! The team finished fueling the Breeze M upper stage successfully today, and we held the formal State Commission meeting.

Everything and everyone who is involved with this launch reported in tonight: every major launch vehicle component, system or facility; weather, down-range, telemetry, tracking, the electro-magnetic compatibility environment, launch pad, power, SC, customer, ILS, KhSC, Russian Space Forces -- we must have had 150 people there. All entities were a "go" for roll-out. We are working no issues at this time.

Everything is on track. We are getting up early tomorrow for our tradition of rolling the rocket out to the launch pad at precisely 6:30 in the morning.

Posted 31 July

[0 comments](#)

Posted By: HOT BIRD 8 Team at 20:51, Baikonur

## Fuel Rollout & Relaxation

We rolled the ILV out to the Breeze M fueling station today! We hope that is the last time she will be in the building. It is a major event, and is the first of a series of large moves that are breathtaking to see. The Breeze M upper stage is having its propellant tanks filled, first with oxidizer (today), and then tomorrow with fuel. Then we will roll out to the launch pad and erect. But before that, tomorrow, every agency on and off base associated with this launch will report their readiness status at the State Commission meeting.

While the fueling took place, a busload of Astrium, ILS, KhSC and KB Salyut team members headed to the "Zone of Relaxation" for a little unwinding. It was a long bus ride but we arrived at a place that seemed like an oasis. There was a small lake with some paddle boats, a swimming pool, a mineral-water shower and some *dachas* where you could set your stuff and rest. The catering staff brought our barbecues and we had a wonderful *shashlik* barbecue of beef, chicken and salmon. There were different salads, cookies, pastries, coffee and tea. We had a very nice time and it was a good chance to refresh before we buckle down for the last big push before the launch.



Photo: ILV rollout from Hall 111 to Breeze-M fueling station

Posted 30 July

[0 comments](#)

Posted By: HOT BIRD 8 Team at 22:19, Baikonur

## ILV Lift



So far, all operations are on schedule with no issues. Although it is Saturday, we are in the process of working at the launch pad to verify the cabling going up the tower and the ones that go from the under-table vault back to the 92A-50 control room. This will be an end-to-end check of the hardware needed to communicate with the SC when the rocket is installed on the launch mount. In the pictures, you can see how impressive this rocket really is. The whole thing is lifted using two 50-ton cranes locked together. Just the lift beam for this is massive.

Tomorrow KhSC is rolling the rocket to the Breeze M fueling station to load the fuel tanks. We will have the day off during these hazardous operations. We plan on having an excursion out to the "Zone of Relaxation," a picnic area with a swimming pool and a small lake. The team could use some rest. We have been working nonstop for the last two weeks.

Photo: ILV being lifted in Hall 111



Posted 29 July

[0 comments](#)

Posted By: HOT BIRD 8 Team at 18:23, Baikonur

## Communications Rehearsal

Close-outs on the rocket are continuing. The thermal blankets, which will provide passive thermal control to the ascent unit while the rocket is being erected, are being installed. The SC has had a health check and battery charge and is in good shape. Tomorrow we will lift the rocket over to the erector-transporter which will take the rocket to the Breeze-M Fueling Station, and from there, to the launch pad for erection.

Wow! We are only eight days away from launch! Today we trained the customer, Eutelsat, on the use of our abort button and communications system, which will be at his station in the Bunker for the day of launch. We went through a full simulation of the last T-1 hour 30 minutes on-station with the ground software for the launch pad counting down. We applied power to the launch cancellation equipment, activated it at the appropriate time and, after that, it was up to our customer to simulate a launch abort condition with his personnel and press the button. All went well, and we got to see the launch count stop. We hope we never have to use it, but we are glad to have it.



*Photo: ILS & KhSC members working together in the Bunker during communications rehearsal*

Posted 28 July

[0 comments](#)

Posted By: HOT BIRD 8 Team at 17:34, Baikonur

## Integrated Launch Vehicle



What a day! Activities are ramping up as we approach the final week before liftoff. We completed the mate of the ascent unit to the LV today. It's an exciting process to watch, even though the mechanics of it happen very slowly. Once that finished, we ran electrical and mechanical checks on all of the cables and systems connecting the two segments and also the fiber optics that run to the control room. Everything checked out perfectly. Now that they are joined, we call the whole thing the Integrated Launch Vehicle (ILV).

Tomorrow, we get to see something even more amazing than today's mate: two 50-ton bridge cranes will use a lifting beam to pick up the ILV and place it on the launch transporter. As you can see from the picture, the ILV is huge so you can imagine what a feat that is to witness.

*Photo: Ascent Unit (front end) to Launch Vehicle (back end) mate*

Posted 27 July

[0 comments](#)

Posted By: HOT BIRD 8 Team at 18:37, Baikonur

## Ascent Unit Transport

We got a huge amount done today, but the BIG news was that the president of Belarus, Alexander Lukashenko, visited Building 92A-50 and Hall 111 where our Proton rocket and now the ascent unit are located. (Belarus' first satellite, BelKA, is scheduled to launch on a Dnepr rocket tonight.) He had quite an entourage, around 30-40 people, media, cameras, etc. We got to watch on our security cameras, since we were locked down in our half of the facility from about an hour and a half before his visit to a half-hour after. As we watched the group on a video monitor, we were hoping that CNN would get a nice shot of our ILS and Eutelsat logos displayed on the fairing.

Today the SC, encapsulated in the payload fairing -- which we will call the AU (ascent unit) from now on -- moved by transporter out of one end of the building and into the other to meet up with the Proton LV first three stages. The LV electrical harnesses, which connect from the base of the rocket all the way to the SC, checked out using the SC test equipment from the control room. The cool thing about our Proton is that ALL of what are commonly called "umbilical cables" attach to the bottom of the rocket. Although there are some cables hooked up directly into the fairing, those will be disconnected. So, for lift-off, you won't see any of those dangling cables that you see on other rockets.

We also moved a rack of electronic equipment to the launch pad and lowered it into the underpad Vault using a mobile crane. This rack will help the SC folks communicate with the SC from the control room at Building 92A-50, to the launch pad, and up through those very same LV harness cables, once we move the rocket out to the launch pad and erect it.



Next we will be mating the AU to the Proton LV to make the Integrated Launch Vehicle (ILV). It seems like things really accelerate when we get to this point. We are 10 days away from launch and there are faxes and memos flying back and forth.

*Photo: Ascent unit (SC encapsulated in the payload fairing) moving to Hall 111.*

Posted 26 July

[1 comments](#)

Posted By: [HOT BIRD 8 Team at 18:15, Baikonur](#)

## Verification & Installation



ILS completed the process of verifying that the Bunker and the Vault are ready to support the HOTBIRD 8 mission. KhSC continued final preparations with the payload fairing. The Bunker is where the ILS launch program director will sit, along with the KhSC counterpart, the Eutelsat customer and the launch vehicle person who actually interfaces with the launch equipment. We have a ton of communications lines and an abort button. That is the Bunker team's major function: aborting the launch if the SC is not ready. The underpad Vault is where the SC interface rack is located. This allows the SC folks to remotely power up and monitor their SC while it is on the launch pad.

Last night we had a very nice barbecue hosted by Eutelsat. The best toast was made by our host, who said, "Here we have French, Russian, American,

Armenian, British, and German specialists all working together in harmony for a common goal. We should be the example for the rest of the world." It brought down the house.

We had steak, salmon, and chicken wings, vodka, wine, beer, and soft drinks. After a few more toasts, we cranked up the music and all danced out under the gazebo. It was a very pleasant evening, not too formal. I think everyone needed a low-key event like that to relax after the last few days.

*Photo: Fairing installation*

Posted 25 July

[0 comments](#)

Posted By: [HOT BIRD 8 Team at 19:05, Baikonur](#)

## Mate to Breeze M

We had a very busy weekend here in Baikonur. As of today, the SC has been mated to the adapter, lifted onto the Breeze M upper stage and initially encapsulated in the payload fairing (PLF). It takes a lot of work by many different teams to get through these critical activities. One of those teams is the Saab Ericsson specialists who install the clampband, which holds the SC to the adapter.

After the SC is mated to the upper stage using this clampband, the whole assembly is tilted over horizontally. Just think how strong this adapter and the bolts holding the upper stage must be -- the SC weighs nearly 5 metric tons when fueled.

Today, we said goodbye to many of our Astrium colleagues who started the first half of the launch campaign. This evening there will be a welcome barbecue to formally greet our new Astrium colleagues who have arrived. Although we have been working together for these last three days, this will be the first time we will all stop to take a breath and say hello.



*Photo: Completed mate to Breeze M*

Posted 24 July

[0 comments](#)

Posted By: [HOT BIRD 8 Team at 18:30, Baikonur](#)

## Camelita



We received a shipment of camels -- the stuffed variety, of course. There are 40 of them and they are destined for the VIP tour. One of them in particular has caught the attention of Hawkeye. Her name is Camelita. Her theme song is sung to the tune of Bruce Springsteen's "Rosalita," but none of us can sing, so we haven't gotten very far with that.

When they met, it was love at first sight! Hawkeye's team cautioned us that Hawkeye is here to work, not play, so they will be watching to make sure he doesn't get too distracted. That may be so, but we think they BOTH look much happier.

Sadly, it will have to be a short-lived romance. Hawkeye will go back to Paris with his Eutelsat friend and Camelita may end up back in the States with one of the ILS team.

*Photo: Camelita stops to smell the flowers.*

Posted 23 July

[0 comments](#)

Posted By: HOT BIRD 8 Team at 16:23, Baikonur

## Spacecraft Mate

Friday night we celebrated an ILS launch manager's birthday. The kitchen outdid itself with a beautiful and delicious three-tier cake, and our colleagues lined up to congratulate her on her birthday. We also attended the post-propellant load party, hosted by the team from EADS Astrium UK. We had a great time with our friends and colleagues, but many of us had to call it a very early night, because this morning operations started at 0600.

This morning we entered our next major phase of the campaign. The SC rolled out from Hall 103 to the high bay, Hall 101, in order to prepare for mating to the launch vehicle adapter. By 9 a.m. it was suspended from the lift and beginning the gentle process of setting down on the adapter. The specialists from Saab installed and tightened the clamband, which holds the SC to the adapter. Now we are working to do electrical checks of the SC through the adapter transit cables. When completed, the whole SC (with adapter now attached), will be lifted and placed atop the Breeze M upper stage.



The Breeze M is installed in the integration/tilting fixture. Electrical checks with it were accomplished yesterday. By midnight tonight, we should be mated to the upper stage and checked out. Next, we will tilt the whole thing horizontally, do RF checks and remove protective covers in preparation for encapsulation.

*Photo: SC mate to adapter system.*

Posted 22 July

[0 comments](#)

Posted By: HOT BIRD 8 Team at 18:15, Baikonur

## HOT BIRD 8 Mission Overview



In addition to the launch team blog, this page will also serve as the information portal for our current campaign. From time-to-time, the Communications Team will post relevant campaign information and links to press releases about the launch.

Our [HOT BIRD 8 Mission Overview](#) is now available for download in PDF format.

We hope you're enjoying the launch campaign blog as much as we are. Let us know what you think!

*Photo: Artist rendering of HOT BIRD 8 satellite in orbit. Provided by EADS Astrium.*

Posted 21 July

[0 comments](#)

Posted By: ILS Communications Team at 11:41, EDT

## Propulsion Ops Complete

We just finished a major milestone for the satellite this evening. The SC propulsion team completed the load of fuel (monomethylhydrazine, or MMH) into the SC tanks. That means our little HOT BIRD will be ready to leave the nest soon! She's got full tanks and will be able to fly herself to final position once we give her a boost.

The Proton launch vehicle (LV) and Breeze M upper stage will deliver the HOT BIRD 8 satellite into a geosynchronous transfer orbit at an inclination of 13 degrees. That means that at its apogee, it will be 35,786 km above the earth, and at perigee, will be much less (3800 km). The SC will "circularize" its own orbit and reduce its inclination until it is in a geosynchronous orbit.

The fueling completes the SC standalone operations. Next, we will lift the SC up, mate it to the LV adapter, and then mate the adapter to the Breeze M upper stage. At each phase we will carefully check the electrical and mechanical links. By early next week, we will be ready to encapsulate the SC in the payload fairing (PLF).



*Photo: The prop team in the middle of propellant load operations.*

Posted 20 July

[0 comments](#)

Posted By: HOT BIRD 8 Team at 21:53, Baikonur

## Baikonur International Space School



Today we were introduced to the students from Baikonur International Space School, as well as students from a sister school in Novosibirsk. Although it is summer, and school is out, these two teams of kids are touring the Baikonur launch base because they are model rocket builders. They participate in competitions all over the world. This year, there will be an international model rocket competition held at Baikonur Sept. 19–29, sponsored by the Fédération Aéronautique Internationale (FAI).

Cool stuff! They showed us pictures of their previous competitions, and also gave us some really neat presents: stickers; a

stamp commemorating Valentina Tereshkova, the first woman in space; a pocket calendar with the logo of their International Space School; a pin with the FAI logo; and a photo of the Soyuz rocket. We, in turn, gave them stickers, pocket flashlights, hats, and light-up pens. We also presented the director of the school with a HOT BIRD 8 t-shirt and pin.

Among the ILS team who met with these kids, we have about 80 years of experience in the aerospace world — including Titan, Atlas, Delta and Pegasus rockets, as well as the space shuttle and various satellites — so we encouraged the kids to ask questions. They were shy, but produced one or two. Then, after some cold drinks, they got back on their bus and returned to the school. Days like these are the best part of the job!

*Photo: ILS HOT BIRD 8 Team with Baikonur ISS students.*

Posted 19 July

[0 comments](#)

Posted By: HOT BIRD 8 Team at 21:12, Baikonur

## One Down, One to Go

The SC prop load team loaded the oxidizer tanks earlier today. As noted before, most of us were cleared of the facility, leaving only the primary support personnel nearby during this hazardous operation.

In parallel, we had a marathon meeting to work out the details of our launch countdown document. It is the joint document which governs our interface with the Proton launch team. The customer, Eutelsat; SC manufacturer, Astrium; launch vehicle (LV) provider, KhSC; and ILS sat down and reviewed the on-pad days minute by minute. It is a very time-consuming job, but important, because we have to coordinate with so many different agencies and everyone needs to know what is expected of them. It takes hundreds of people to make one rocket launch come together, and it is a magnificent task to have everyone on the same page, at the same time, in the same millisecond, for that one launch. Pretty amazing when you think about it.



They just made the announcement to end the hazardous ops! Although there will be a bit more work tonight, this is a sweet sound to hear. We also just got word that the MetOp launch is back on for tonight. We are trying to see who can go and watch it. Always good to see a launch. They're the best fireworks in the world!

*Photo: "Olympic" camel. Please note: no camels were harmed in the making of this blog.*

Posted 18 July

[0 comments](#)

Posted By: HOT BIRD 8 Team at 19:20, Baikonur

## Ready for the Milestone



Everything is going well. The SC team worked Sunday, getting us ready for the SC propellant load. Today, the prop team took a rest prior to starting the load tomorrow. The SC Assembly, Integration, and Test (AIT) team continued working two shifts today to do their internal preparations for launch.

Tonight, the MetOp satellite will be launching from Area 31 on a Soyuz-ST Fregat. Our team will go out to the viewing area and watch it. It is particularly exciting for EADS Astrium, as it is another of their SC, and their friends and colleagues are out there working on it.

Tomorrow will be a long day for the prop team but a day off for almost everyone else. Because the dynamic flow of propellants is a hazardous procedure, all non-essential personnel will be prohibited from entering the facility. We will have our morning and other meetings back here at the hotel area, and there will be a town trip and a trip to one of the picnic areas down by the river. Folks will make a long leisurely day of it and have dinner in town, too.

There are two days of loading, one for oxidizer and one for fuel. We will load ox tomorrow, then fuel on Thursday.



The day in between is for reconfiguration of the systems: disconnecting the propellant cylinders and swapping them out, flushing and changing over the waste systems, changing load carts, etc.

We just received word that the MetOp launch is scrubbed for tonight after being delayed for 90 minutes due to fueling problems. It has been rescheduled for tomorrow, so we'll try to send launch photos then if we get any good ones.

*Photo: Eutelsat flag at launch complex, outside Building 92A-50.*

**Posted 17 July**

**0 comments**

**Posted By: HOT BIRD 8 Team at 21:55, Baikonur**

## Safety & Security

The preparations for SC Propellant Load Operations are taking a little longer than anticipated so we are going to use one of our contingency days to make up some schedule time: This is why we plan our campaigns with built-in margin. We try and plan standard two-shift operations six days a week. That way, if we have to make up some time, we can extend shifts and also work Sundays – which is why we are working today.

There's another support group here that we'd like to introduce who are very important to the smooth operation of our launch campaigns: Pinkerton Government Services. Although ILS has people here specifically to ensure we are compliant with government regulations, Pinkerton is our seasoned staff of security professionals who serve as our eyes and ears. They guard our facilities and SC 24-7.



In addition, they are trained in Emergency First Aid, CPR and AED usage so that they can provide first aid while our SOS doctor and nurse are on the way – skills in which the ILS team are also trained, just in case. The "Pinkertonians", or "Pinks", as we often call them, also do periodic facility security rounds. They are often the first to report if we have any facility problems.

The Pinkerton folks come from all over and all different backgrounds. They are men and women; some retired military; some come from commercial security services; they travel the world providing these services for many customers. They all share one thing: a dedication to assuring that all our facilities are safe and secure.

It takes a special kind of person to come out to Baikonur to work security. There are several different government agencies and commercial companies involved at the launch site, and each entity has proprietary concerns regarding its equipment and spaces. The Pinkerton team not only enforces these myriad requirements, but they also do it tactfully. We're proud of our PGS team. They've been with us for the whole 10 years we've been working out here in Baikonur, and we've grown together. They, too, reflect our whole attitude of customer service. Thanks, guys!

*Photo: Pinkerton Security Group team*

**Posted 16 July**

**0 comments**

**Posted By: HOT BIRD 8 Team at 19:20, Baikonur**

## Moving Right Along



It was great to have an evening "off" to celebrate with our colleagues, but today we are back in the swing of things. We have a lot to accomplish in the next few days before the propellant load on Tuesday. When that happens, we will clear the facility and stand by at the hotels. ILS' safety and ops teams will be coordinating support from the facility at Building 92A-50.

After the propellant load, which is our next major milestone, there won't be much room to catch our breath before we start joint operations activities. That's when we start working around KhSC's activity and support requirements schedule until the launch.

They just made an announcement over the radios: "ATTENTION ON THE NET, ATTENTION ON THE NET! Lifting operations will commence at Hall 103A at this time. All

non-essential personnel stay clear of Hall 103A until further notice!" That means they are lifting the SC to the fueling stand, so we are moving right along with the scheduled tasks.

*Photo: Two ILS team members pause for a photo op.*

**Posted 15 July**

**0 comments**

**Posted By: HOT BIRD 8 Team at 22:01, Baikonur**

## Happy Independence Day! -- Part Deux

Today marks our second national holiday this launch



campaign – this time, Bastille Day. Similar to the United States honoring the signing of the Declaration of Independence as the beginning of the American Revolution, so the people of France celebrate the storming of the Bastille as the start of the French Revolution. Both brought great changes, the end of oppressive monarchies and the beginning of republics where the people rule and make their own decisions. Additionally, on July 14, 1790, the French people marked the happy end of the French Revolution with the *Fete de la Federation*.

Here in Baikonur, the teams were treated to two celebrations as well: Eutelsat hosted a barbecue to celebrate the successful completion of the Eutelsat/Astrium Flight Readiness Review; and tonight, Astrium hosted a party at the Proton Club to celebrate the holiday. Following a parade by the “Third Estate”, we had an exquisite dinner of roast canard (duck) with French wine and champagne, followed by a pantheon of luscious desserts.

Following a reading of Bastille Day history, toasts were made to the participants and their home countries by representatives of each of the organizations involved in the HOT BIRD 8 launch campaign. The central theme of was the symbolism of Bastille Day to independence and freedom of the French people and its correlation to the struggles by all of the peoples of the World for freedom and liberty and the constant struggle to retain them. Later, the music was raised to monumental levels and dancing commenced to complete the evening.

*Photo: The Eiffel Tower, Bastille Day*

Posted 14 July

[0 comments](#)

Posted By: HOT BIRD 8 Team at 22:43, Baikonur

## SCAPE Training



Earlier, we watched the EADS Astrium prop team training one of their new team members in the SCAPE (Self-contained Atmospheric Protective Ensemble).

The propellants are considered hazardous materials, so specialized HAZMAT suits must be worn when handling them. Even though procedures and equipment are designed to eliminate vapor and liquid leaks, these suits are worn during the setup and initiation of propellant flow. Filtered, certified breathing air flows into the suits through high-volume hoses. This ensures the team never has exposure to the potentially hazardous fumes.

Because the team needs to be able to manipulate valves and secure the systems in the event of an anomaly, they are put through rigorous training before being allowed to support a real-life propellant operation. In full gear, the new prop team

member had to climb up and down a step-ladder; disconnect from his breathing air and walk the full length of Hall 103 (about 30 meters); bend and pick up some small fittings from the floor, connect them together and put them in a 2x3 inch plastic bag; squat and pick up a ruble note, place it, too, in the same bag, and seal the bag. As you can imagine from seeing the gear, these seemingly simple activities take time and a lot of patience. This is not a job for the claustrophobic!

The prop load process is extremely important and the team takes their jobs very seriously. Team members spend as long as four to six hours in rotating shifts to complete a tank load.

Our next major milestone is the SC propellant load and we are right on cue for the scheduled completion. Aside from close-outs, this is the last SC operation prior to the beginning of our joint operations with the launch vehicle.

*Photo: Left - Getting suited up. Right - Those 2x3 bags? Harder than they look.*

Posted 13 July

[0 comments](#)

Posted By: HOT BIRD 8 Team at 17:56, Baikonur

## Behind-the-Scenes Dream Team

Things are still going well out here in Baikonur. The weather has been unusually cool, and oftentimes we have a nice cloud cover. At night, we can turn our air conditioners off, and in the morning (especially for the early shift), it is so cool that you need a light jacket or long-sleeved shirt.

The SC check-outs went well and the Astrium team completed their SC health checks. Now the prop (propellant) team is doing leak checks and getting ready for prop load. ILS provides support by getting local safety clearances and interfacing with the Russian facilities personnel to provide commodities like breathing air, GN<sub>2</sub> (gaseous nitrogen) and distilled water. As the routine operations continue, the management team looks ahead at the next major activities and meets to do the planning for them.



Today we'd like to introduce our office staff team. They work for Weissker, our Moscow-based logistics consulting company. These hands-on folks take care of all the minute

details that come with arranging for food, shelter, and transportation for our whole team. They work tirelessly to ensure things are perfect for us, doing everything from hauling water up three flights of stairs, to arranging welcome baskets for our customers, to ordering cakes for our guests and team members who have birthdays while here. Oftentimes their service is the key impression that a launch member will take away with them from Baikonur. When asked for any sort of help or favor, you can count on a cheery "Sure! We can do that." And we *couldn't* do it without their support.

*Photo: The best support a launch team could have.*

Posted 12 July

[0 comments](#)

Posted By: HOT BIRD 8 Team at 17:46, Baikonur

### Propellant Prep and Fond Farewells



SC standalone operations continue with electrical checks and all tests are nominal. The SC propulsion team (shown here) will start performing leak checks on the tanks prior to loading them with propellants in another week. The propulsion team is EADS Astrium's elite cadre that travels all over the world performing this very critical work. It's a real pleasure to work with them — they are consummate professionals.

This phase is a slight lull in operations — a lot of behind-the-scenes details that set the stage for a successful launch, but nothing as exciting as the SC arrival and matchmate. After the propellant load, we will prepare for the second team to join us about two weeks prior to the launch. That's when things get very busy and exciting in anticipation of the launch day.

In addition to the first team departure, one of the departing ILS team members celebrated his birthday today. We had a cake for him and after blowing out the candles, receiving the obligatory Kazakh hat and camel, he got on a plane and left us! His stay was short, but we really appreciated

having him here to help us set up.

We also said good-bye to several of our Astrium colleagues from the arrival team. Soon we'll be welcoming the next wave: members from our customer, Eutelsat, and a couple more from Astrium. We are looking forward to seeing them.

*Photo: Propellant team takes advantage of a moment to relax.*

Posted 11 July

[0 comments](#)

Posted By: HOT BIRD 8 Team at 17:57, Baikonur

### Champion Makes a Comeback

As predicted, serious escalation has occurred in the belt tool rivalry. The previous champion reclaimed his Techno-Bob title today and from the looks of it, he won't be displaced anytime soon.

We have settled into the SC stand-alone operations, so the Astrium folks are off testing the SC. The ILS team continues to put supplies away and get everything in order. Our operations folks are putting away cleanroom garb, re-organizing storage areas, and setting up support equipment.

Today we had an after-action review meeting to discuss the SC airfield operations. We also have 11 people leaving tomorrow — members of the SC arrival team and some operational/set up support staff. We gave them campaign t-shirts and pins and everyone received campaign shirts from Astrium.

Hawkeye needed to get a badge, so we took mug shots of him. Since he is originally a Kazakh citizen, we will have to escort him. Of course, he has been living in Paris these last two years. We think this is why he has such an appalled look on his face today — no one dares mention the World Cup around him right now.



*Photo: Left - Return of the Techno-Bob original champion. Right - Hawkeye is official now!*

Posted 10 July

[0 comments](#)

Posted By: HOT BIRD 8 Team at 15:42, Baikonur

### Trip to Town



We had the day off today! It was a great day to recharge our batteries and get some rest & relaxation. Almost everyone went in to Baikonur. We had a bus and two vans, all departing and returning at different times.

Some history about the area: when it was founded in 1955, the Cosmodrome was dubbed "Baikonur" as an attempt to mislead

the West about its true location. The "original" Baikonur is actually a mining town about 320 kilometers northeast of the space center. Administered by Russia and constructed to service the Cosmodrome, the city outside the space center (now called Baikonur as well) went by the name Leninsk until 1995, when it was renamed by then-President Boris Yeltsin.

With the exception of a couple of people who stayed behind in case of any emergencies, the ILS team took advantage of an extremely rare opportunity to hang out together. We went to the market, then walked to Arbat -- the main street, and had lunch at the pizza place there. Afterwards we stopped for ice cream. On the way home we spotted some camels but they were pretty camera shy. At least the Camel Hawks haven't gotten them.

Tonight, we have the theater set up to project the World Cup final soccer match. Of course, our French colleagues are very excited. We have one lone Italian supporter on our crew, and we are debating whether or not we need to send a body guard with her to the event.

*Photo: Camels outside Baikonur city.*

Posted 09 July

[0 comments](#)

Posted By: HOT BIRD 8 Team at 16:38, Baikonur

## Matchmate Complete

Right now, it's Saturday morning and the matchmate is in progress. After some unexpected delays on Friday, we came in on the 7 a.m. bus to get an early start.

Yesterday, the SC arrived in the wee hours of the morning to the facility. The railcars were pushed into the cleanroom and the support equipment containers were off-loaded to the floor. After the SC team arrived at 5 a.m., the SC container was off-loaded to the floor. Then the team pushed the railcars out of Hall 101 and closed the doors. The containers were cleaned and the environment re-established, and then the SC team opened the SC container and verticalized the SC. Finally, they rigged up the lifting sling and lifted the SC to the transport dolly. This took all morning and some part of the afternoon.



At that point, we should have been ready for matchmate. That is when the SC is lifted to the LV adapter for a mechanical verification of fit prior to starting operations. The teams were assembled in the High Bay and completed the pre-test briefing. Just when we were ready to disperse and start operations, the lights went out. We found out later that the feeder line from the Kazakh commercial power grid had been lost.

Shortly thereafter, emergency generators provided power restoration. The generators are huge. They could technically provide enough power to seamlessly cover all the critical functions of the Cosmodrome at the time of an outage; however, if they were hooked up at the time the commercial lines went down, we would have been feeding the commercial grid as well. Therefore, a very controlled switch-over takes place after an outage, first removing the commercial links and then attaching the generators. Just after the emergency generators powered up, we were told that the commercial line grid had been restored to power and we switched back.

During the return to power, we discovered that the SC team's lift set developed an internal leak. The lift set incorporates a load cell (a weight read-out) and a hydraulic lift with a small range of play. It is placed between the crane hook and the lifting sling and the crane moves the SC to within a couple centimeters of contacting the adapter surface. Then, the lift brings the SC down *very* slowly until it comes in contact with the adapter. The advantage of using the lift set is its ability to move at such a slow rate of speed.

Because the crane hoisting speeds in Hall 101 are a little too fast for a controlled mate without a lift set, we needed to develop an alternate procedure. We have two good alternatives, both of which have been used before; however, by the time we finished discussing our plans, it was quite late. We decided that we would wait to start the matchmate, as most of the crew had had a very long day.

All is well that ends well -- we just received word that the SC team completed the matchmate. The SC is powered up for health checks, and so far all flight parameters are nominal. The container will be moved back to the airfield and the Antonov will depart sometime this afternoon.

*Photo: SC, removed from railcar, in the High Bay.*

Posted 08 July

[0 comments](#)

Posted By: HOT BIRD 8 Team at 10:16, Baikonur

## Hawkeye Returns



Today, we'd like to officially introduce you to the HOT BIRD 8 Mission Mascot, Hawkeye. We especially like the expression on his face in this picture. Buck-up, Hawkeye. Things will be even better after we move all the supplies in and set up the office!

We received the SC and associated equipment at the Processing Facility at 03:45 this morning. People have been unloading equipment all day. It is like Christmas and Easter all at once. All kinds of boxes, but it is a hunt to find what you need in the vast amount supplies we received. At least all the campaign T-shirts made it in.



Unfortunately, Hawkeye is of little help. Case of water up the stairs. Case of office supplies down the stairs. Case of clean-room garments to storage. Case of coffee to the break room. But once it is all done, we will be settled in nicely!

*Photo: Hawkeye's Triumphant Return to Baikonur*

Posted 07 July

[0 comments](#)

Posted By: HOT BIRD 8 Team at 09:28, Baikonur

## Spacecraft Arrival

The HOT BIRD 8 Spacecraft (SC) landed at Yubeleinyi airfield at 10:40 this morning. The seasoned launch crew waited patiently at the hotels for word that the plane had taken off from Ulyanovsk, where it had landed in the night to clear customs and refuel. When the call came, we gathered up and departed.

The Antonov landed and the crew began the process of clearing customs and unpacking the nose, where the SC container is located. The nose of the Antonov flips up and ramps, which are stored in the aircraft as well, are pieced together to roll the SC container out. The rear of the Antonov opens downward so the air containers can be pulled out by crane, dropped onto lowboy trucks, and moved out of the way.



Building the ramp alone takes about two hours. It's another two hours to off-load the air containers and place them on railcars with forklifts. Then, it takes about two more hours to rig the crane, lift the SC Container to the railcar, and tie it down. But it's not done yet... after that, it's another hour of hooking up the instrumentation for the vibration recordings, sampling the air and attaching the air ducts for the environmental system. If all goes well, it can actually be completed in about five or six hours.

In this case, there was such a tight fit we only had two centimeters clearance between the skin of the plane and the container. Because the SC could not move in to the right spot to be picked up by the fixed-position, rail-car-mounted crane, we had to roll the SC back up the ramps, put it back in the aircraft, move the aircraft, move the ramps, and do it again.

Good thing it's summer in the Northern hemisphere and we have daylight until 10 pm every night!

*Photo: Antonov aircraft; unloading Eurostar 3000 SC*

Posted 06 July

[0 comments](#)

Posted By: HOT BIRD 8 Team at 20:17, Baikonur

## Tool Envy



One of the guys showed up at Baikonur with a new belt tool. Probably no one outside of Operations realizes that this is the coolest accessory that you could have. The belt tool is a small hammer with two knives, a box wrench, and a screwdriver that fold out of it. It comes in a holster with another tool, which is a standard pair of pliers with knives, screwdrivers, etc.

For that, he won the "Techno-Bob" award, much to the chagrin of the previous champion. Those of us not in the Ops world felt free from the competition, but there was a time when we all would have had to escalate our weapons. It is worrisome to think what this might lead to. Someone speculated that the next accessory will be pocket-sized power tools.

*Photo: New Techno-Bob champion with his winning equipment. Batteries sold separately.*

Posted 05 July

[0 comments](#)

Posted By: HOT BIRD 8 Team at 10:39, Baikonur

## Happy Independence Day!

It rained today and the temperature is much cooler - perfect for our 4th of July barbecue. The charcoal that we ordered came, and it looks like something from the Flintstones!

The barbecue was a huge success and started everyone off on the right, friendly note. Getting the fire going was a real bear. We used about two containers of lighter fluid and had to break up the Flintstones charcoal before it would stay lit.

Oh! We have a mascot! One of the Eutelsat folks celebrated his



birthday on the last Eutelsat Proton campaign, W3A. In honor of his birthday, the KhSC team gave him a toy camel as a gift because the Eutelsat team had a running joke that they never see camels out here in Baikonur. For some reason, during the W3A campaign, it was true: no matter how many town trips they made, they never seemed to get lucky and spot one. They decided that the camels were being carried away by hawks - Camel Hawks, to be exact. So, the little camel was christened "Hawkeye". We'll take pictures of Hawkeye throughout the campaign, because his "owner" brought him along.

*Photo: Weissker teammate and our Stone Age charcoal.*

**Posted 04 July**

[0 comments](#)

**Posted By: HOT BIRD 8 Team at 22:15, Baikonur**

## "Before"



The first few days of the campaign, we have had some little hitches as we all learn to work together and get the rhythm of a new team. It is a reported 104 degrees today and it's not hard to believe. We took a team photo. We are going to do a "before" and "after."

Not much else to report. Tomorrow is Independence Day in the United States, so we are cooking up burgers for the team.

*Photo: ILS HOT BIRD 8 Team*

**Posted 03 July**

[0 comments](#)

**Posted By: HOT BIRD 8 Team at 19:31, Baikonur**

## We Made It

Well, it is nearly midnight Baikonur time on July 2 and we are all here safe and sound. No exhaustion and no one missed the bus. It was quite exciting traveling Friday and Saturday, chasing each other through time zones as we tried to coordinate changes to our charter departure, in the hopes that we could get the entire team on the same flight. If you've already read the travel entry, suffice it to say that we have a great support team, and this is how we maintain our edge.

Everything came together in the end. The "stragglers" made their flight, which managed to depart and land reasonably on time. The airlines even located the missing luggage in record time and shipped it along with them. Since everyone on our multi-national team met in Moscow as planned, we didn't have to worry about commercial flights in to Kazakhstan and the charter pushed off at precisely 1 p.m. Moscow time. Landing in Baikonur is like coming home. We have been through much growth from the early days. Consequently, we always get a warm welcome here.

Today we had on-arrival briefings: safety, security, and medical. Can you tell by the looks on the faces just how interesting the subject material is? In order to perk everyone up a bit, we passed around cold drinks while the nurse briefed us on the dangers of dehydration.

*Photo: Briefing at Fili Hotel*



**Posted 02 July**

[0 comments](#)

**Posted By: HOT BIRD 8 Team at 23:49, Baikonur**

## Always an Adventure

Traveling to Kazakhstan is not difficult. Getting out of the United States on a long holiday weekend is another story. An early arrival at Washington Dulles uncovered the first of a series of travel glitches: our original flight to Atlanta was canceled.

The airlines wanted us to re-route through Newark, and take a 35-mile taxi ride to JFK to catch the flight to Moscow. This is doable, but not within a two-hour window between flights, on a Friday, at the start of the aforementioned holiday weekend. Such an expectation leads us to wonder if someone at the airlines believes in the traffic fairy.

On to Plan B: rushing to Reagan National to catch a different flight to JFK. We made it with time to spare but due to a baggage handler shortage, we departed one hour late. Positive mental focus failed to propel the jet through any wormholes in the space-time continuum and we landed 30 minutes before the flight to Moscow was scheduled to depart – just enough time to run from Gate 11 to Gate 7 and catch the Moscow flight.

But once again the fickle finger of fate interfered. Our late arrival allowed our parking slot to be occupied by another aircraft. We were stuck while our spots on the Moscow flight were given away, since the airline so

thoughtfully oversold the aircraft by about 25 seats.

At the service counter, the well-meaning airlines agent tried to get all of us out on other flights, only to discover *they* were overbooked as well. Off we went to the only hotel that had space for us and the seemingly hundreds of other overbooked passengers.

Did we mention that our suitcases *did* make the flight? We hope to see them again soon because clothes are not nearly as stylish after three days of constant wear... here's to hoping for better luck tomorrow.

Posted 01 July

[0 comments](#)

Posted By: HOT BIRD 8 Team at 21:22, EDT

## Countdown to Departure

In preparation for the launch campaign trip, we have done all the major things and are now down to the mundane. We have several licenses in place that usually take three to six months to finalize. We completed them in less than two. We got Baikonur access for personnel in 12 days - a process that normally requires 45 days, minimum. Also, we received our Letters of Invitation (LOIs) in 10 days, something that often takes four weeks. We have closed all action items except for one, and we have no issues to work. All of our pre-launch verifications are complete. We have no technical issues at all.

What we *have* been burning up the keyboard with this morning is trying to get commercial flight tickets to and from Baikonur. This is one of the hardest things to do, especially in the summertime, but we will work it out.

The whole multi-national team is flying in today with a goal of meeting in Moscow for the flight in to Baikonur on July 2. The group consists of team members from EADS Astrium, the spacecraft manufacturer; Eutelsat, the customer; and our colleagues from KhSC (Khrunichev State Research and Production Space Center); the ILS technical team, plus interpreters and office support staff; Pinkerton, which provides physical and technology security; and SOS, our medical support staff. ILS also has a few extra people on board during this mission for training and set-up.

The real integration for this program began when the contract was signed 23 November 2004. For the first two months or so, we worked a dual integration, as we did not know whether it would be HOT BIRD 8 or HOT BIRD 7A. Eutelsat decided it would be HOT BIRD 8 on 25 January 2005. So, by the time we launch, we will have been working this for 20 months.

This "bird" (the HOT BIRD 8 SC) does not have anything unusual about it. It is a Eurostar 3000 SC (spacecraft) platform. It does have extended propellant tanks which should afford it longer SC on-orbit life. The Proton launch vehicle (LV) has no new hardware or software. The mission is a standard five-burn "9 hour" – well, 9 hours, 11 minutes, 20 seconds, to be exact.

We're happy and excited to be leaving soon!

Posted 30 June

[0 comments](#)

Posted By: HOT BIRD 8 Team at 09:33, EDT

## Welcome to the HOT BIRD 8 Launch Campaign



At ILS, we have decided to try a new format to keep our customers and readers up-to-date on the latest launch campaign activities. Our goal is to provide a unique insight in to the work and excitement that takes place prior to the launch.

This launch campaign blog will be written collectively by the HOT BIRD 8 launch team as they embark on their travels, work and play in Baikonur, and complete another succesful launch.

We hope you enjoy following along. See you on August 4th/5th!

Posted 30 June

[0 comments](#)

Posted By: ILS Communicati

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This page last updated on Thursday, July 27, 2006  
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