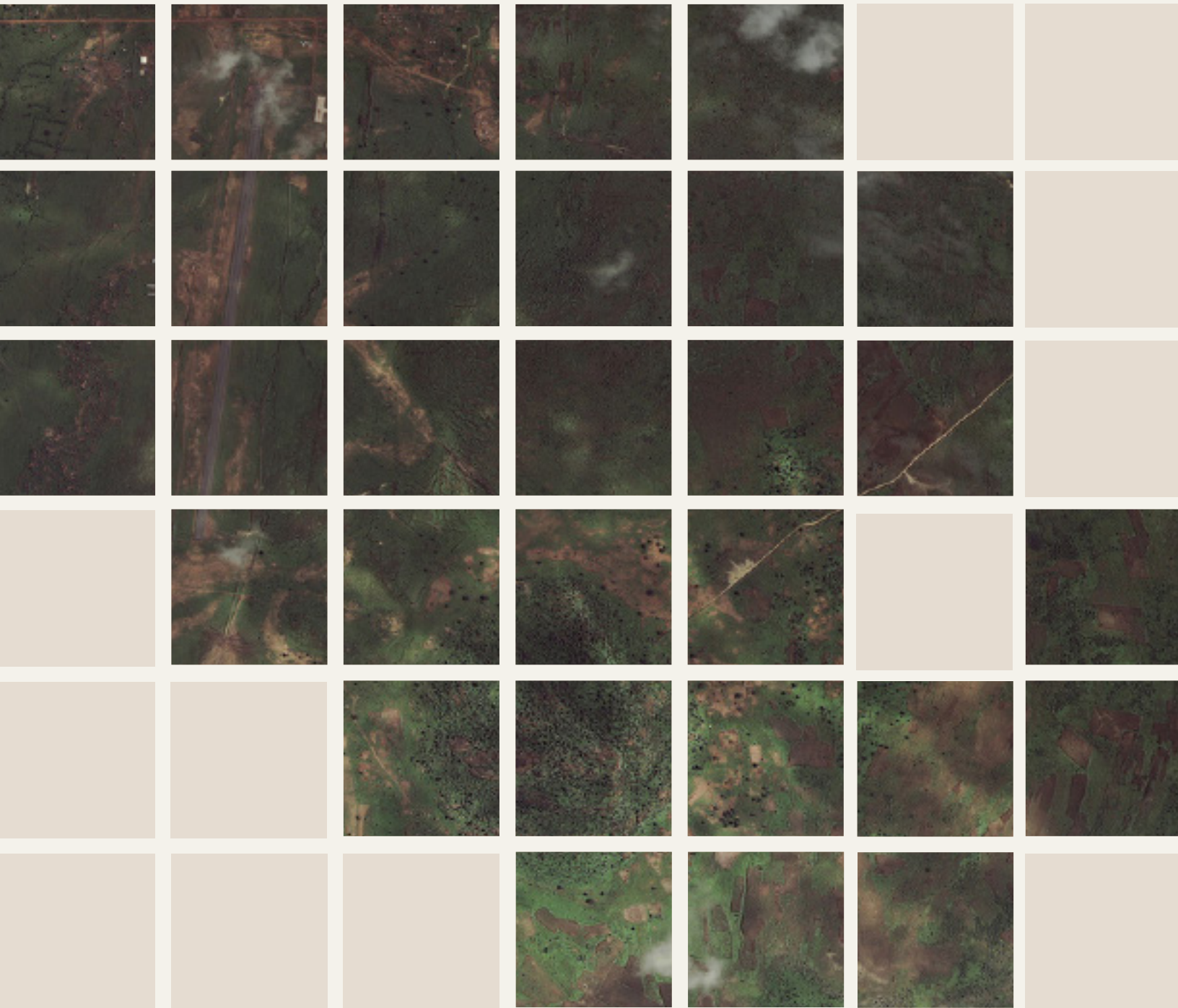


# Fatal Impact:

Plane Crash of Sudan's Delegation  
to Talodi, South Kordofan, Sudan

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## Satellite Sentinel Project

Monitoring the Crisis in the Sudans

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# Fatal Impact:

Plain Crash of Sudan's Delegation to Talodi,  
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September 1, 2012



Video still from footage broadcast on Sudan's Ashorooq TV on August 19, 2012, showing the Antonov crash site in Talodi, South Kordofan, Sudan. The debris appears to include a blue section of the plane's tail fin.

**COVER:** DigitalGlobe Natural Color Image of Talodi, South Kordofan, Sudan taken on August 20, 2012.

## Satellite Sentinel Project



ANDREAS FOTOPOLOUS/ AIRPICS.NET

Photo of the Alfa Airlines Antonov An-26-100, registration number ST-ARL, taken in Thar Jath, Sudan, on November 10, 2010, showing a blue tail fin.

## Overview

For the past two years, the Government of Sudan, or GoS, has sent delegations of senior officials, including military and security leaders, accompanied by state media crews, to Sudan Armed Forces, or SAF, bases in border areas during the Muslim holy month of Ramadan.

On August 19, 2012, on the Muslim holiday of Eid al-Fitr, which marks the last day of Ramadan, a GoS delegation chartered a plane which took off from Khartoum and crashed on approach to the SAF airstrip in Talodi, South Kordofan. The Talodi delegation was one of four delegations, which the GoS dispatched to hotspots of rebellion during Ramadan 2012. The other three went to SAF bases in El Fasher, North Darfur<sup>1</sup>; Kadugli, South Kordofan; and Kurmuk, Blue Nile state.<sup>2</sup>

The crash killed all 26 passengers—including three generals from military, intelligence and police forces, six ranking leaders of the Popular Defense Force, or PDF militia, a government minister, 11 other senior officials, a five-member state media crew, and the six-member flight crew.

## Imagery and Analysis

New satellite imagery obtained by DigitalGlobe for the Satellite Sentinel Project, or SSP, confirms that the plane crashed 1.5 kilometers southeast of the SAF airstrip at Talodi. The plane, a 38-year-old Alfa Airlines Antonov An-26-100 (registration number ST-ARL<sup>3</sup>) missed its first attempted landing, and then crashed as it circled around for a second attempt.

Satellite imagery captured on August 20 and analyzed for SSP by DigitalGlobe's Analysis Center shows that the impact site is on the southwestern slope of Hagar al Nar (Arabic for "stone of fire"), a cone-shaped mountain, formed by a volcanic vent, which rises 244 meters above the surrounding plain. The limited size of the debris field, characterized by a black burn pattern dotted with small pieces of debris in a confined area, indicates that the destruction of the plane was caused by the collision with the mountain, and not by any event prior to the moment of impact.

In a January 2012 report, SSP confirmed that between November 29, 2011 and January 13, 2012, SAF leveled the Talodi airstrip and lengthened it from 1,100 to 1,800 meters, thus permitting Antonov aircraft to land there for the first time.<sup>4</sup>

The lengthening and leveling of the airstrip to accommodate Antonovs is militarily significant because the SAF airstrip in Talodi is the closest to the rebel stronghold approximately 50 kilometers (30 miles) away in the Kauda Valley of South Kordofan. SAF uses Antonovs not only to transport forces and cargo, but to indiscriminately bomb civilians in Darfur, South Kordofan and Blue Nile state.

Because of the Talodi crash, the GoS has published the names and positions of each member of that delegation.<sup>5</sup> The 26 passengers included Maj. Gen. Salah Ismail of the Sudan Air Force; Maj. Gen. Ahmed Musa Ahmed from the police force; Maj. Gen. Ahmed Al-Tayeb Abu-Guroon from the security and intelligence forces; Brigadier Lugman Omer, Second Commander of the PDF; five other ranking members of the PDF; Guidance and Religious Endowments Minister Ghazial-Sadiq Abdel Rahim; Justice Party Chairman Makki Ali Balayil; National Assembly Member Hamid Al-Aghbash and seven other officials from Khartoum; two state ministers; and a five-member crew from state media. In addition, six employees of Alfa Airlines SD, which operated the Antonov, built in 1974, are numbered among the dead.

The plane, like other Antonov An-26 aircraft, was operated by a five-person flight crew when it carried cargo to Sudanese oil fields: a pilot, a first officer, a radio operator, a flight engineer, and a navigator.<sup>6</sup> When the plane carried passengers, as it did on August 19, its crew sometimes included cabin attendants.<sup>7</sup> On this flight, the bodies of a Russian pilot, a Sudanese first officer, a Tajik navigator, and an Armenian flight engineer were recovered<sup>8</sup>, along with two more described by authorities as "two female Sudanese stew-



ards.”<sup>9</sup> The body of the radio operator was not reported among the dead.

There is no evidence of foul play, and rebel spokesman Arnu Ngutulu Lodi told Agence France-Presse that rebel forces had nothing to do with the crash.<sup>10</sup> The GoS has sent the plane’s flight data recorder, or “black box,” to Russia for analysis.<sup>11</sup>

Video imagery of the crash site, taken on August 19 and broadcast on Sudan’s Ashorooq TV,<sup>12</sup> shows sunny weather. And an eyewitness who observed the Antonov before its fatal impact that morning, reported to SSP, “The Talodi area had only a few clouds that day, and they were high in the sky.”

A few days before the fatal flight to Talodi, safety regulators from the GoS had grounded Alfa Airlines Antonovs, including this one, for safety reasons.<sup>13</sup>

## Endnotes

- [1] “Ministers of Defence, Interior conclude visit to El-Fashir, get assured about measures to contain recent incidents.” Sudan News Agency (SUNA), August 17, 2012. Retrieved on August 28, 2012 from URL: <http://www.sunanews.net/english-latest-news/25063-ministers-of-defence-interior-conclude-visit-to-el-fasir-get-assured-about-measures-to-contain-recent-incidents.html>
- [2] “32 people, including high ranking Sudanese officials, killed in S. Kordofan plane crash.” Sudan Tribune, August 19, 2012. Retrieved on August 28, 2012 from URL: <http://www.sudantribune.com/spip.php?article43631>
- [3] Simon Hradecky, “Crash: Alfa Airlines An-26 near Talodi on Aug 19th 2012, impacted mountain during go-around.” The Aviation Herald, updated August 24, 2012. Retrieved on August 29, 2012 from URL: <http://avherald.com/h?article=454807ea>
- [4] Satellite Sentinel Project, “Siege: Evidence of SAF Encirclement of the Kauda Valley.” January 25, 2012. URL: <http://www.satsentinel.org/report/siege-evidence-saf-encirclement-kauda-valley>
- [5] “Martyrdom of 32 persons in plane crash in Talodi area.” Sudan News Agency (SUNA), August 19, 2012. Retrieved on August 28 from URL: <http://www.sunanews.net/english-latest-news/25118-martyrdom-of-32-persons-in-plane-crash-in-talodi-area.html>
- [6] An aviation photographer who captured the Alfa Airlines Antonov An-26-100 which later crashed in Talodi has observed that there were five members of the flight crew when it flew from Khartoum to deliver supplies to an oil field near Thar Jath, Sudan. “ST-ARL Antonov An-26-100, Alfa Airlines.” Photograph taken by Andreas Fotopolous for Airpics.net on November 10, 2010. Retrieved on August 28, 2012 from URL: <http://www.airpics.net/photo/ST-ARL-Antonov-An-26-100-Alfa-Airlines/18018>
- [7] “Our team.” Alfa Airlines SD. Retrieved on August 28, 2012 from URL: <http://alfaairlines.sd/ourteam.htm>
- [8] Hradecky, The Aviation Herald, op cit.
- [9] “Sudan: Civil Aviation chief resigns over plane crash.” Sudan Tribune, August 21, 2012. Retrieved on August 28, 2012 from URL: <http://allafrica.com/stories/201208220459.html>
- [10] “Sudan plane crash kills 32, including politicians and generals.” Agence France-Presse, August 20, 2012. Retrieved on August 29, 2012 from URL: <http://www.thenational.ae/news/world/africa/sudan-plane-crash-kills-32-including-politicians-and-generals>
- [11] “Sudan crash black box going to Russia.” Agence France-Presse, August 27, 2012. Retrieved on August 28, 2012 from URL: <http://www.google.com/hostednews/afp/article/ALeqM5jofBjVuBBZ1vfUNcTr-grclx6rMg?docId=CNG.387a38931e4e30913b88a52aa2ce84f9.461>
- [12] Ashorooq TV new video, originally broadcast on August 19, 2012. Retrieved on August 28, 2012 from URL: <https://www.youtube.com/watch?v=Cl1nN0VvRpk&feature=share>
- [13] “Sudanese carrier ignored orders to ground doomed plane - report.” Sudan Tribune, August 27, 2012. Retrieved on August 28, 2012 from URL: <http://allafrica.com/stories/201208290059.html>



Talodi, South Kordofan, Sudan



Sudan Armed Forces  
Airstrip at Talodi

1.5 km

Crash Site on  
Hagar al Nar

300 meters

DIGITALGLOBE®

Hagar al Nar, southeast of the SAF airstrip in Talodi, South Kordofan, Sudan  
August 20, 2012



## Hagar al Nar Mountain



**Crash Site**



DigitalGlobe natural color image of Hagar al Nar, taken August 20, 2012, and draped over SRTM-DEM (Shuttle Radar Topography Mission-Digital Elevation Model) to show a 3-D image of the plane crash site. SRTM is an international research project to generate a high-resolution digital topographic database of Earth imagery.

## Talodi, South Kordofan, Sudan



**Town of  
Talodi**

**Sudan Armed  
Forces Airstrip**

**Hagar al Nar**

300 meters

**DIGITALGLOBE®**

Talodi Town, SAF airstrip and Hagar al Nar  
August 20, 2012





77 meters



DIGITALGLOBE®

Hagar el Nar in Tilodi, South Kordofan, Sudan  
August 20, 2012

Ashorooq TV video stills of the crash site, taken August 19, 2012 [INSETS], compared with DigitalGlobe image of the site taken August 20.

The confined area of the crash site, characterized by a black burn pattern with small pieces of debris, show that the plane was destroyed by the collision with Hagar al Nar, and not by any event prior to the moment of impact. The white column of smoke visible in the video of the crash site on August 19 appears to be blowing to the north. This corroborates a report that the Antonov had been flying on a bearing of 180 (south), attempting to land into the wind, on its initial approach. The plane then circled around and crashed into the southwestern slope of Hagar al Nar on its second attempt, having failed to clear the terrain.





## About the Satellite Sentinel Project and the Partners

SSP launched on December 29, 2010, with the goals of preventing a return to full-scale civil war between northern and southern Sudan as well as detecting, deterring and documenting threats to civilians along both sides of the border. SSP focuses world attention on pending incidents of mass violence in the Sudans and uses imagery and analysis to generate rapid responses on human rights and human security concerns.

The project works like this: A constellation of three DigitalGlobe satellites passing over Sudan and South Sudan captures imagery of possible threats to civilians, detects bombed and razed villages, or notes other evidence of mass atrocities or pending mass violence. SSP analyzes the imagery, open source data, and information from sources on the ground to produce reports.

The Enough Project contributes field reports, policy analysis, and communication strategy and, together with Not On Our Watch, pressures policymakers by urging the public to act. DigitalGlobe provides high-resolution satellite imagery and analysis conducted by the DigitalGlobe Analysis Center.

SSP is the first sustained public effort to systematically monitor and report on potential hotspots and threats to human security in near real-time.

SSP is primarily funded by Not On Our Watch. To support the Satellite Sentinel Project, donate at [satsentinel.org](http://satsentinel.org).

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