

# Satellite Sentinel Project

## ESCALATION: EVIDENCE OF SAF AND SPLA COMBAT OPERATIONS

HUMAN SECURITY INCIDENT

REPORTED BY



Harvard  
Humanitarian  
Initiative

### 23 APRIL 2012

The Satellite Sentinel Project (SSP) has confirmed through the Harvard Humanitarian Initiative's analysis of DigitalGlobe satellite imagery that Sudan Armed Forces (SAF) has deployed a significantly increased number of combat capable air assets within range of South Sudan's border and territory. SSP has documented evidence consistent with reported aerial bombardment in close proximity to a strategic bridge located in Unity State, South Sudan. SAF spokesman al-Sawarmi Khaled Saad denied Sudan's involvement in the bombings. "We're just defending our land, and we have nothing to do with what's happening in Unity state," he said on 16 April 2012.<sup>1</sup>

In imagery dated 15 April, SSP has identified evidence consistent with alleged looting by Sudan People's Liberation Army (SPLA) and SPLA-aligned forces at a SAF military installation in Heglig. In imagery dated 16 April, SSP identified the presence of apparently razed structures in Heglig town. Although the structures were razed between February and April 2012, SSP cannot determine the exact time of the razing, the actors involved, or the precise context in which the buildings were destroyed. Both Sudan and South Sudan claim sovereignty over Heglig, which South Sudan refers to as Panthou.

### SAF AIR CAPACITY

The aircraft identified at El Obeid airbase and Kadugli airstrip may represent a significant portion of reported SAF combat capable air assets. According to a recent report by the International Institute for Strategic Studies (IISS), SAF's air force includes 11 Sukhoi Su-25 attack aircraft; SSP has identified 5 Sukhoi Su-25s at El Obeid on 16 April 2012. The IISS reports that SAF holds 15 A-5 Fantan attack aircraft (also known as the Nanchang Q-5); SSP has identified 3 aircraft consistent with this type at El Obeid airbase. Twenty-nine (29) Mi-24 attack helicopters are noted in the IISS report; SSP has identified 8 helicopters consistent with this type at El Obeid and Kadugli, respectively. SSP has also identified 5 aircraft consistent with MiG-29 fighters at El Obeid; the IISS reports 23 MiG-29s in Sudan's air force.<sup>2</sup>

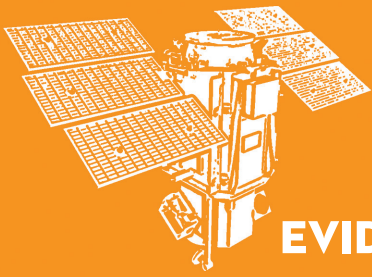
### BENTIU BRIDGE BOMBING

SSP has also identified two areas of apparent aerial bombardment in close proximity to the Rubkona-Bentiu bridge in Unity State, South Sudan. The bridge connects Bentiu to Rubkona; the SPLA's 4th Division headquarters is in Rubkona and falls along the road leading to the disputed Sudan-South Sudan border.<sup>3</sup> The Deputy Director of South Sudan's Military Intelligence, Mac Paul, stated that SAF intended to cut a supply route to the SPLA.<sup>4</sup>

Analysis of DigitalGlobe imagery corroborates reports of aerial attacks targeting the bridge on 12 and 14 April. On 12 April, Sudanese war planes reportedly dropped five bombs near the bridge.<sup>5</sup> On 14 April, two Sukhoi fighter jets reportedly dropped bombs within 100 meters of the bridge. The attack killed four civilians, but did not damage the bridge.<sup>6</sup> Imagery captured on 18 April shows evidence of aerial bombardment in proximity to the bridge, including visible scorched earth and damaged structures. Imagery from 4 April, before the reported bombings, contains no visible signs of bombardment and civilian structures appear to be intact. A Sukhoi Su-25 has an operational range of 375 km/ 233 mi; Bentiu is not within a Su-25's range from El Obeid airbase. An Su-25 based at Kadugli airstrip, however, would be within operational range of the Rubkona-Bentiu bridge. Recent imagery collected by SSP identifies aircraft consistent with Su-25s at El Obeid airbase.

### LAWS OF WAR GOVERNING LOOTING & DESTRUCTION OF CIVILIAN PROPERTY

Evidence of looting, indicated by scattered debris, is present at a SAF military installation in Heglig. Alan Boswell, reporting from Heglig, stated that the SPLA captured and looted a SAF military base in northern Heglig.<sup>7</sup> The destruction or seizure of enemy property may violate international law governing the conduct of land warfare.<sup>8</sup> Razed structures, also visible in Heglig, may constitute evidence of an act that violates international law governing the protection of civilian property.<sup>9</sup>



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### SOURCES

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### ABOUT THE PROJECT

Satellite Sentinel Project conducts regular, intensive monitoring of Sudan to assess the current human security situation and identify potential threats to civilians.

Analysis prepared by Harvard Humanitarian Initiative.  
Imagery and additional analysis provided by DigitalGlobe.



FOUR SUKHOI Su-25  
GROUND ATTACK AIRCRAFT

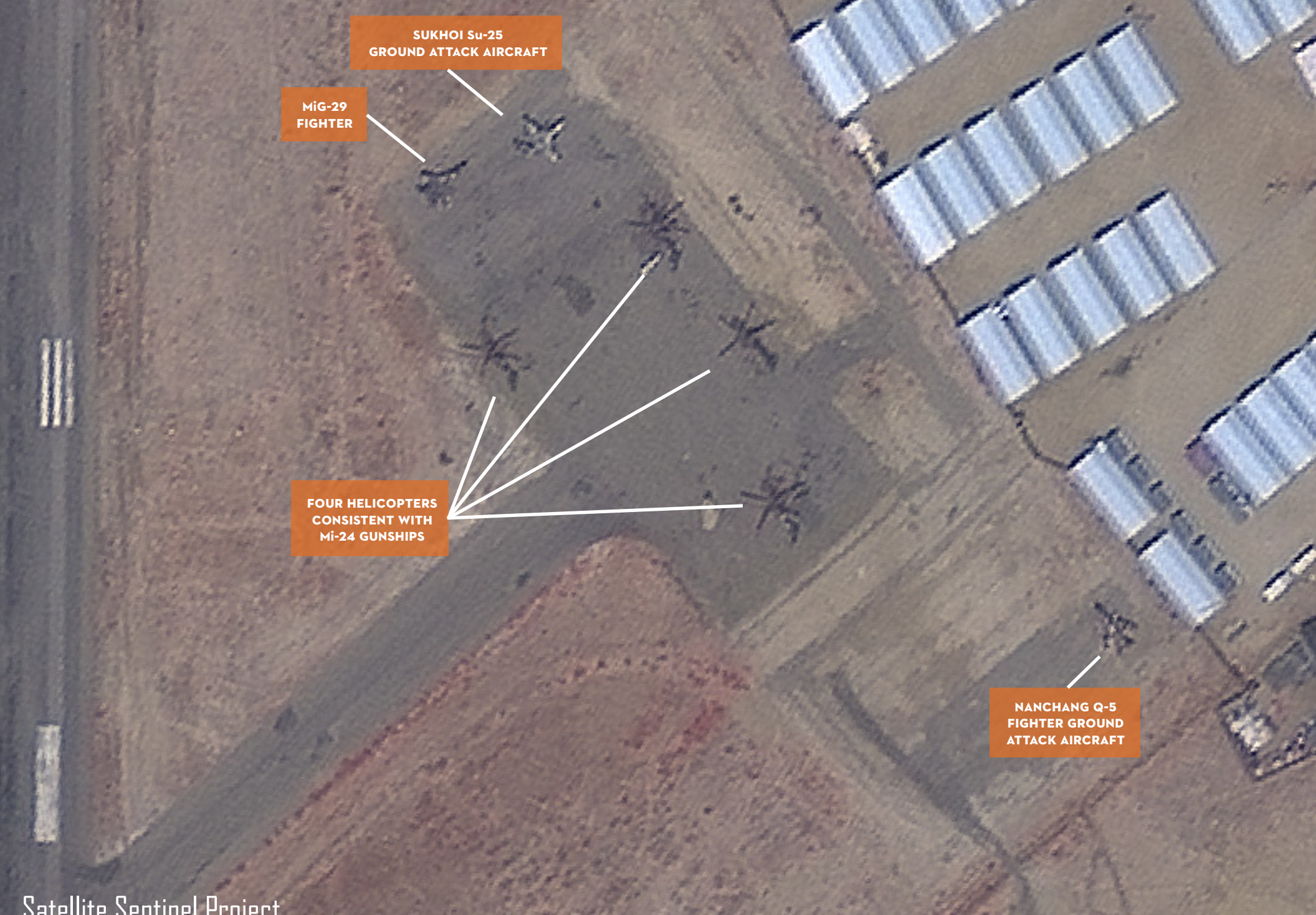
THREE ANTONOV  
An-24/26 TRANSPORTS

FOUR MiG-29  
FIGHTERS

TWO NANCHANG Q-5  
FIGHTER GROUND  
ATTACK AIRCRAFT

YAK-40  
TRANSPORT





SUKHOI Su-25  
GROUND ATTACK AIRCRAFT

MiG-29  
FIGHTER

FOUR HELICOPTERS  
CONSISTENT WITH  
Mi-24 GUNSHIPS

NANCHANG Q-5  
FIGHTER GROUND  
ATTACK AIRCRAFT





FOUR HELICOPTERS  
CONSISTENT WITH  
MI-24 GUNSHIPS

TWO VEHICLES  
CONSISTENT WITH  
T-55 TANKS





4 APRIL 2012

RUBKONA-BENTIU BRIDGE

APPARENT CIVILIAN STRUCTURES INTACT

RUBKONA, SOUTH SUDAN

BENTIU, SOUTH SUDAN

18 APRIL 2012

CRATERING CONSISTENT WITH SAF AERIAL BOMBARDMENT REPORTED ON 12 APRIL

SCORCHED EARTH AND BURNED STRUCTURES CONSISTENT WITH REPORTS OF SAF AERIAL BOMBARDMENT ON 14 APRIL

Satellite Sentinel Project



7 FEB 2012

15 APR 2012

STRUCTURES  
APPEAR INTACT

APPARENT  
RAZED STRUCTURES  
(APPROX. 100)

Satellite Sentinel Project



7 FEB 2012



APPARENT SAF BASE  
PRIOR TO ALLEGED LOOTING

16 APR 2012



SCATTERED DEBRIS CONSISTENT WITH  
REPORTS OF LOOTING BY SPLA

Satellite Sentinel Project



7 FEB 2012



APPARENT SAF BASE  
PRIOR TO ALLEGED LOOTING

16 APR 2012



SCATTERED DEBRIS CONSISTENT WITH  
REPORTS OF LOOTING BY SPLA

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## ABOUT THE PROJECT AND THE PARTNERS

### THE WORLD IS WATCHING BECAUSE YOU ARE WATCHING.

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 deterring and documenting threats to civilians along both sides of the border. SSP focuses world attention on pending incidents of mass violence in Sudan and uses its imagery and analysis to generate rapid responses on human rights and human security concerns.

The project works like this: DigitalGlobe satellites passing over Sudan and South Sudan capture imagery of possible threats to civilians, detect bombed and razed villages, or note other evidence of pending mass violence. The Harvard Humanitarian Initiative 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.

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 synthesizes evidence from satellite imagery, data pattern analysis, and ground sourcing to produce reports.

Not On Our Watch - co-founded by Don Cheadle, George Clooney, Matt Damon, Brad Pitt, David Pressman, and Jerry Weintraub - has provided seed money to launch the project. To support the Satellite Sentinel Project, donate at [www.satsentinel.org](http://www.satsentinel.org).

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