

AscTec Falcon 8 – multispectral & multifunctional

3. March 2015



Drone-based bridge inspection and geodata provided by Orbiton after the collapse of Skjeggstad bridge on February 2nd helped determine that the bridge had to be demolished as quickly as possible due to danger of further collapse.

Decommissioning was to be carried out using explosives as part of a complex operation which involved danger of a massive quick clay landslide. Once again Orbiton was contacted by the Norwegian National Public Road Authority (NPRA) to supply inspection and geodata to geologists and engineers as soon as the motorway bridge including 2,700 ton structure was blown up. Clearing work of debris and ash will continue for very long.

UAV attitude control versus high wind + explosion blast

Watch the AscTec Falcon 8 hardly shaken by the explosion's blast waves:

Note: It is Orbiton's original, not stabilized version of the footage in full HD and slow-motion. The minimum shakes due to high wind and then the slight shake as the UAV gets hit by the shock-wave at approximately 00:27. Besides note it's not yet an AscTec Falcon 8 including new AscTec Trinity autopilot technology, which will be released on May 1st. Beta-tests show: It will provide even more stability!

Details on "Skjeggstad" bridge's blast

Press Release /// Pressemitteilung

After a thorough risk analysis and a complete shutdown of airspace, Orbiton established a forward operating position just 100 meters from ground zero. Together with explosives experts from [AF Decom](#), the intensity and angle of the blast were determined to guarantee the safety of our personnel. Further tests were carried out to make sure our unmanned aircraft was not blown out of the sky by the shock wave and flying debris. Orbiton's expert pilot then flew the UAV right up to the edge of the blast envelope and held the position when over 100 kilos of explosives, including 15 kilos of highly-explosive C4 were detonated.

“Indeed the AscTec Falcon 8 was able to cope with a 15-kilos-C4-detonation in 100 meters direct distance. Despite the complexity of the operation, Orbiton was able to deliver on all fronts and provide authorities, police, geologists, engineers and the national media with the data requested. Until now the footage in the NRK media pool has been seen by over 1.000.000 people.”
Says Gonzalo Figueroa, owner & operator, Orbiton.

Since the first promising emergency bridge inspection right after the bridge's collapse on February 2nd 2015, Orbiton had been Norwegian Public Roads Administration's (NPRA) first choice. Learn more and read [“Urgent UAV Emergency Call for Bridge Inspection in Norway by Orbiton”](#).

Full-Service Drone = multispectral & multifunctional

In this case the certified provider of flight operations for industrial inspection and imaging with unmanned aircraft had to proof both: The multi-functionality of our high-tech drone and its own full-service abilities. So the UAV / drone-based inspection specialist had to meet the most exacting demands fully flexible: Right before blast the complete territory had to be observed with aerial thermography in a civil reconnaissance flight. Orbiton was commissioned to provide infrared surveillance data prior to the explosion to national police and security personnel as part of their efforts to insure that no trespassers entered the 500 meter blast zone. With the help of the special Inspection Payload, a smart camera combination of infrared and RGB camera, it was possible to provide synchronously JPGS and georeferenced 14-Bit RAW thermal images for this purpose.

Being this such a high-profile operation, Orbiton was also requested by NPRA to supply aerial footage to the entire press corps in Norway. For this, Orbiton awarded the national broadcasting service (NRK) the task of feeding HD video into a media pool. Quite challenging, because of windy environment. Nevertheless wind gusts of up to 19 m/s had been measured during the inspection.

Due to an even smart AscTec Falcon 8's plug & play payload concept there is an easy way to switch cameras as circumstances require. So you can spontaneously change the payload at any time to get the best project results with the most suitable camera system. The system identifies the chosen payload. All parameters and functionalities are available on the Mobile Ground Station. This means immediately: Attach the camera and take off in less than a minute!

Please note: Ascending Technologies develop and produce multirotor and autopilot technology, but provide no service. For further information about UAV / drone-based bridge inspection and structure

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