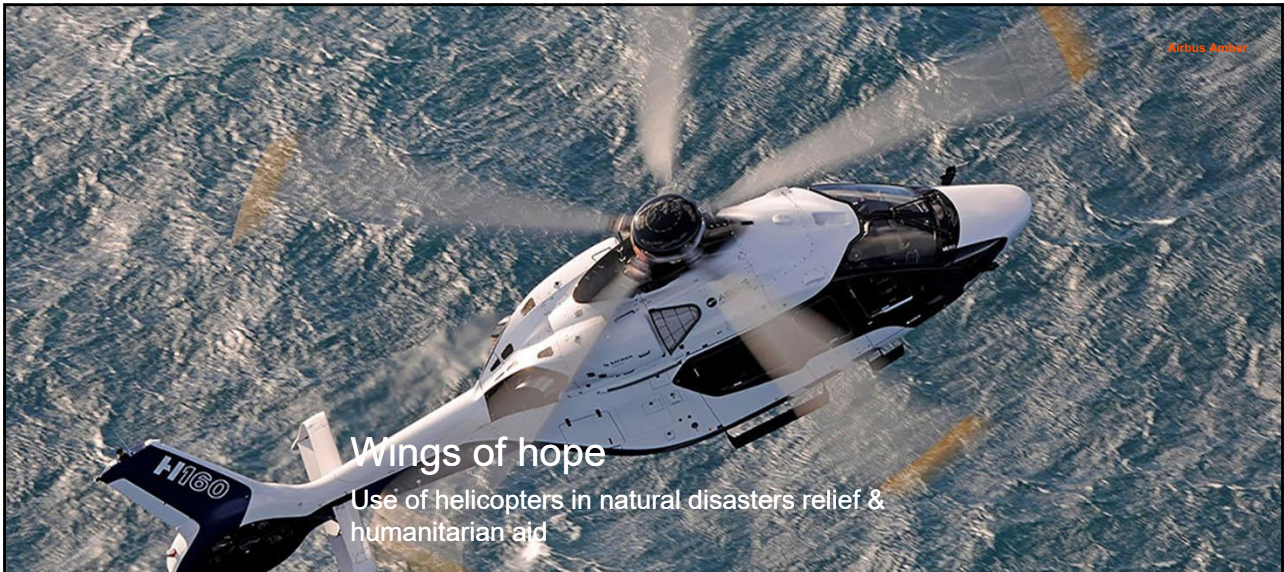




Wings of hope
Use of helicopters in natural disasters relief & humanitarian aid

HELICOPTERS
Wagner Flores, Aviation Safety Specialist
03rd December 2024

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2

Airbus Amber

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From Brazil
Made by brazilians

Knowing the
company...

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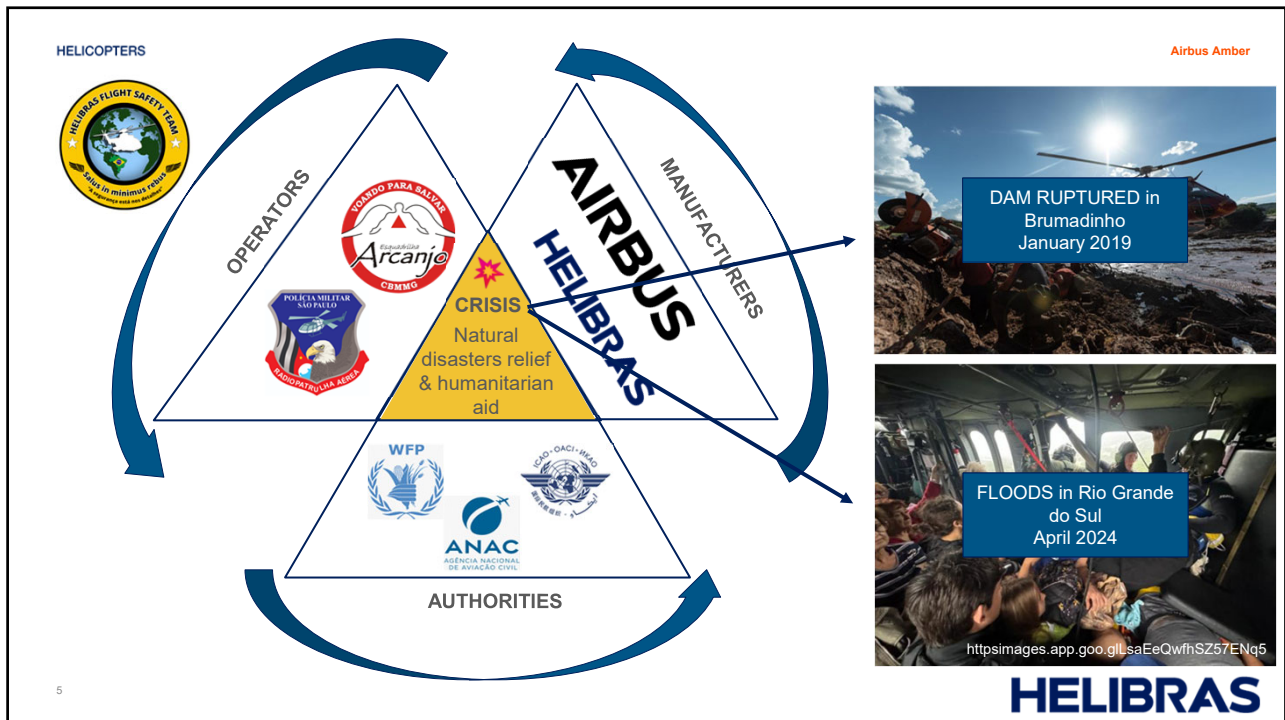
"Salus in minimis rebus" - Safety is in the details

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DISASTERS SCENARIOS

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Airbus Amber

HELIBRAS FLIGHT SAFETY TEAM

Ruptured ore dam in the city of Brumadinho -
25th of January of 2019

Brumadinho
City

270 People died
3 Missing
267 Confirmed dead

By Nasa Earth Observatory - Link, public domain,
<https://commons.wikimedia.org/w/index.php?curid=76421774>

6

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Airbus Amber

BRUMADINHO - Operational scenario

- Contaminated mud by ore residues
- Mud difficult the movement on the terrain
- Impossible access for land vehicles
- 270 missing people under the mud
- Other helicopters sharing the same airspace - 31 helos.

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Airbus Amber

BRUMADINHO - Flight operations stats

- 31 Helicopters from different make and models.
- 613 Average movement between take-off and landing per day.
- Four million square meters of area to cover.
- Two dedicated AFIS units from Brazilian Air Force to coordinate the air traffic.
- 1.516 Flight Hours.

Source:
<https://www.resgateaeromedico.com.br/aeromedico-do-brasil-brumadinho-maior-operacao-aerea-de-emergencia-ja-realizada-no-brasil/>

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Floods in Rio Grande do Sul - 27th of april of 2024



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RIO GRANDE DO SUL - Operational scenario

- 15.778 square kilometers flooded of area to be covered.
- Almost 600.000 people homeless.
- 183 people died with the flood.
- Adverse meteorological conditions.

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<https://images.app.goo.gl/jMhmFmnyzCzTgjXw6>

Airbus Amber

RIO GRANDE DO SUL - Flight operations stats

- More than 1000 flight hours flown.
- 22 helicopter of different make and models.
- More than 20.000 people rescued only by helicopters.

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Airbus Amber

HELICOPTERS
LATEST TECHNOLOGIES FOCUS ON H125 AND H145

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Airbus Amber

BRUMADINHO - Helicopters main use

Helicopters focused:

- H125
- H145

Transport of rescuers and victims.

Rescue and transportation of bodies.

Transport of equipment and rescue materials.

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Airbus Amber



Latest technologies - Baseline aircraft definition - H125



HOIST:

- Electrical hoist Breeze
 - 204 kg (Max. Load)

Electrical hoist Goodrich

◦ 130 kg (Max. Load)

50m/ 164 ft - cable



(simplified depiction)

- Eng engine monitoring
- Eng health monitoring
- Eng creep damage counter
- Mnt functions, including capability of data downloading

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[illegible]**HELIBRAS**

RIO GRANDE DO SUL - Helicopters main use

Helicopter focused:

- H135

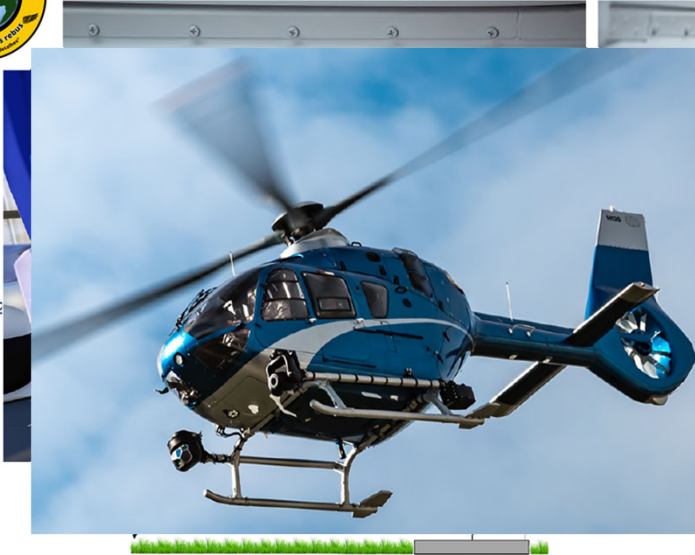
Transport of rescued people with emergency care to hospitals.

Supply provision for isolated people.

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Latest technologies - Baseline aircraft definition - H135



Electro-Optical System (EOS)

- Star SAFIRE 380 HD
- Star SAFIRE 380
- UltraForce 350 HD

ing procedure

(AHRS)

Electronic Stand-by

it (IESI)

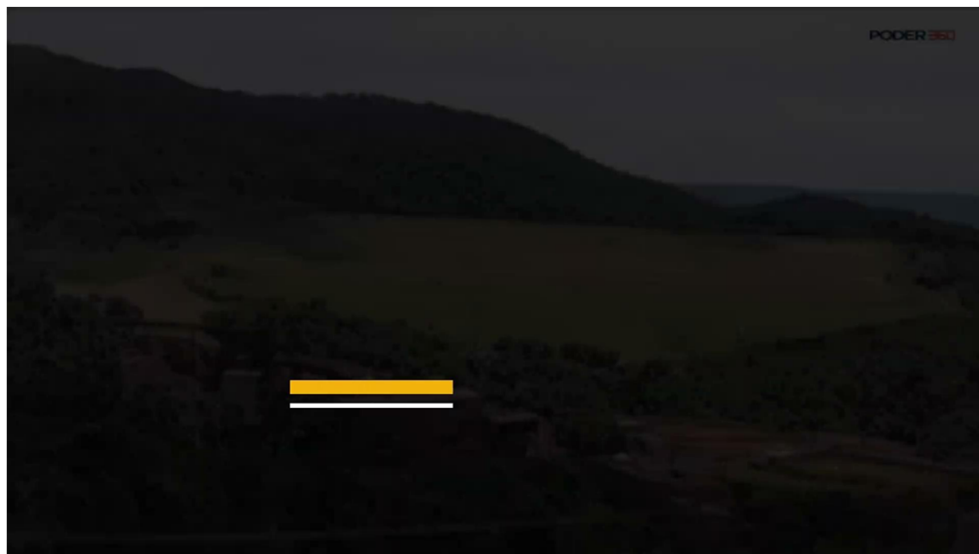
50% compared with the

Full Usage Monitoring System (UMS)

in the basic Helionix package.



Remembering and honoring



Thank you

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