



Líder no mercado brasileiro de Asas Rotativas

CRFS
Crash Resistant Fuel System

CRASH RESISTANT FUEL SYSTEM

H125 / H130, the worldwide reference



Rotor & Wing feb/mar

“Appetite for Disruption: A Rotorcraft Program Update”

Crash -Resistant Fuel System Update

New tanks, valves, awareness and pending regulations increase post-crash survivability.

MARK ROBINS



Legislação existente desde 1994 exigindo CRFS para a certificação de novos helicópteros, não abrangendo as certificações anteriores.

Em 2014 o FAA verificou que apenas 15% dos novos helicópteros fabricados possuíam tais sistemas implantados (Certificado original eram anteriores a 1994).

Em função dos acidentes com fogo pós impacto e suas consequências para as vítimas, o NTSB emitiu a Recomendação de Segurança A-15-12, incluindo todas as aeronaves fabricadas após 1994, a despeito de seu certificado original de design.

Novas propostas já estão sendo avaliadas e implementadas mundo afora... (Russia Ka-226, Australia R-44, etc).

CRFS Crash Resistant Fuel System



Photo courtesy of Lake Dillon Fire Rescue for R&W – A helicopter post-crash fire

CRFS Crash Resistant Fuel System

As FFAA utilizam sistemas CRFS desde a década de 70. Segundo o US ARMY, a utilização deste tipo de equipamento resultou em:

Redução de 66% de fogo pós acidente nos acidentes com possibilidade de sobrevivência (survivable acidentes), e 18% de redução de fogo pós impacto naqueles em que não havia possibilidade de sobrevivência.

Redução de 75% de lesões térmicas e NENHUMA fatalidade decorrente de lesões térmicas nos acidentes cujas condições de impacto possibilitaram a sobrevivência de seus ocupantes.



Photo courtesy of StandardAero in R&W



HELICOPTERS
Service

H-Care
Helicopter Maintenance

Upgrades
Crash Resistant Fuel System

CRASH RESISTANT FUEL SYSTEM

H125 / H130, the worldwide reference

**over 5,000
in-service
Aircraft**



**over
32,000,000
performed
flight hours**



**some 1,900
operators
worldwide**



**Safety by
design**

**Simple to
operate**

**Ready for any
mission, highly
versatile**

**The most
Competitive**

AIRBUS

CRASH RESISTANT FUEL SYSTEM

Enhanced Safety

Requirement:

FAA or EASA
certification
FAR/CS 27.952

Including a 50-
foot aircraft drop
test

- Airbus Helicopters continuously maintain its efforts to improve its solutions and allow customers to perform their missions in the safest condition.
- The current CRFS solutions covers all H125/H130 configurations.
- Airbus Helicopters has been the first to propose in baseline on the H120 single engines a Crash Resistant Fuel System compliant with [FAR/CS 27.952 specification](#).
- Airbus Helicopters proposes a Crash Resistant Fuel System on the H125 in baseline and as a retrofit for the in-service-fleet.

CRASH RESISTANT FUEL SYSTEM

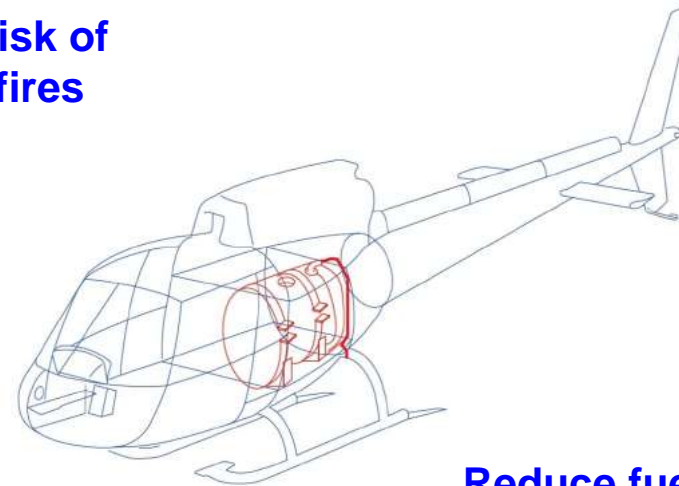
CRFS – Airbus solution

A complete new certified crash resistant fuel tank

with a **rubber bladder** fitted inside an aluminium fairing

compliant FAR/CS 27.952 specification

Reduce the risk of post-crash fires



Improve occupant survivability in an accident

Reduce fuel leakage in case of crash

AIRBUS

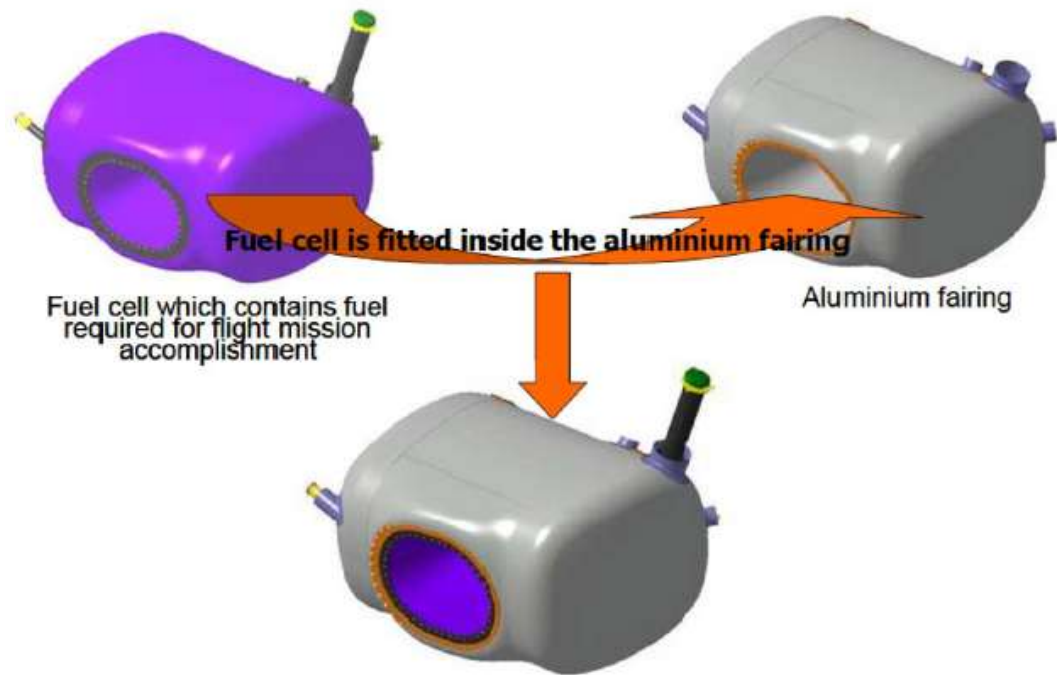
CRASH RESISTANT FUEL SYSTEM

Designed for Safety

A modern
technology for
the fuel tank

with crash resistant
rubber bladder fuel
cell

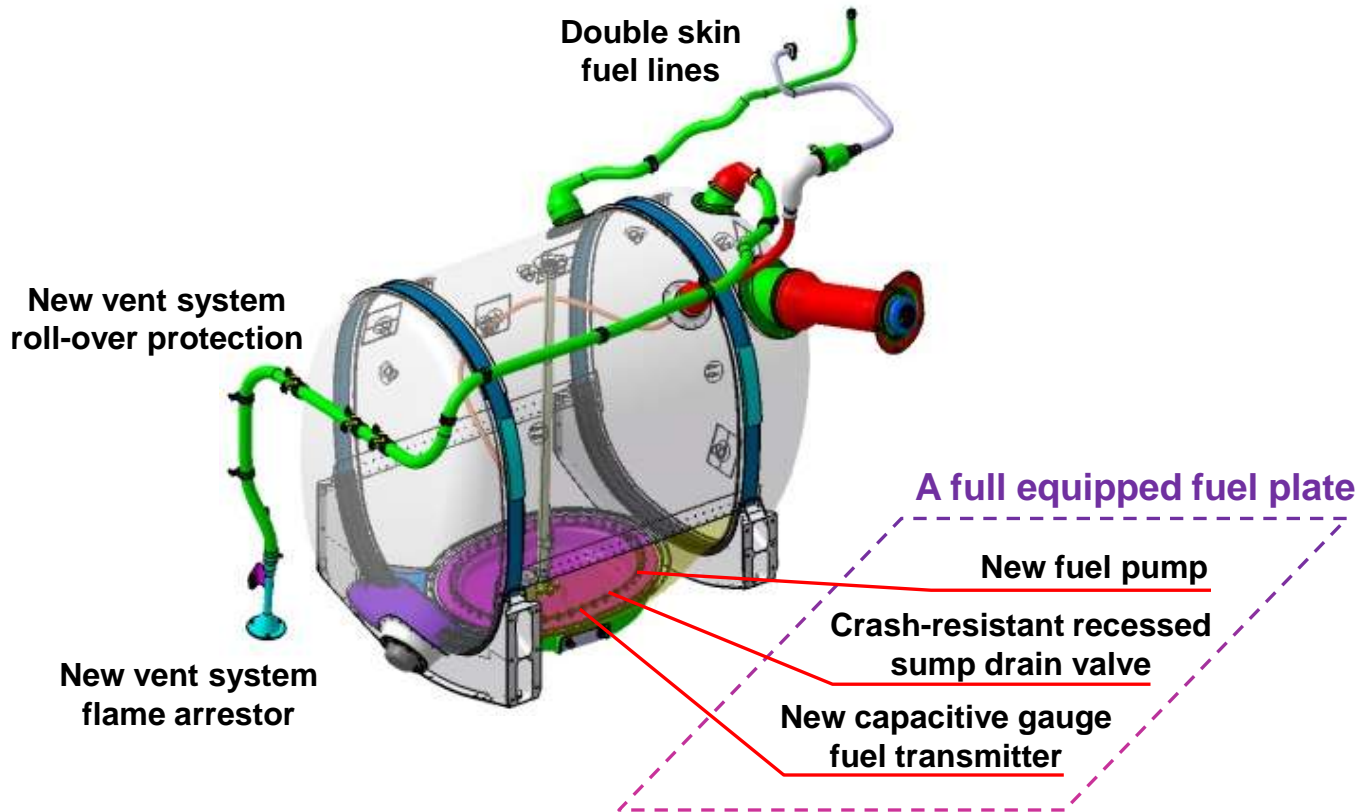
fitted inside an
aluminium fairing



AIRBUS

CRASH RESISTANT FUEL SYSTEM

A new fuel system design



A complete redesign of the fuel system

offering additional new features and benefits:

- Quick change cartridge style boost pump
- Independent Low fuel level sensor
- Easy accessible equipped fuel plate for maintenance

AIRBUS

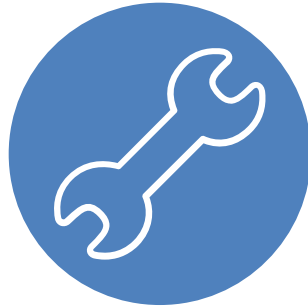
CRASH RESISTANT FUEL SYSTEM

Minimized operational constraints



**+15.6 Kg
CRFS new
fuel tank**

**No change in
maintenance
requirements**



**Equal
amount of
usable fuel**



AIRBUS

CRASH RESISTANT FUEL SYSTEM

Easy to install



Retrofit installation could be performed by the customer (Part 145) or within the Airbus Helicopters network



Simple CRFS kit with pre-assembled fuel tank
Small tool box with specific drill-bit for new cradle installation



Downtime 5 to 6 days, some 80/100 hours,
No additional downtime if performed within the frame of a T inspection (600FH // 2Y)



AIRBUS

CRASH RESISTANT FUEL SYSTEM

What are the retrofit solutions ?

A suitable solution for H125 / H130

Two providers:

AIRBUS



H125 Family	
AS350 B, B1, D, BA, B2, B3	AS350 B3e
↓	↓
N.A. <i>AS350 B3 under study</i>	SB Master (1)
STC SR02492AK	STC SR02492AK

H130 Family	
EC130 B4	EC130 T2
↓	
N.A.	NO RETROFIT NECESSARY
STC SR02492AK	CRFS COMES AS STANDARD EQUIPMENT

(1): SB provided at aircraft serial number after ordering through Keycopter



CRASH RESISTANT FUEL SYSTEM

Retrofit certifications

EASA / FAA
compliance



H125 Family

AS350 B, B1, D, BA, B2, B3 ↓	AS350 B3e ↓
N.A. <i>AS350 B3 under study</i>	EASA 27.952 ⁽¹⁾ FAA 27.952 ⁽¹⁾
FAA 27.952 <i>EASA pending</i>	FAA 27.952 <i>EASA pending</i>

H130 Family

EC130 B4 ↓	EC130 T2 CRFS COMES AS STANDARD EQUIPMENT
N.A.	EASA 27.952 FAA 27.952
FAA 27.952 <i>EASA pending</i>	N.A.

AIRBUS



(1): not yet compliant with underbelly installation, compliance expected ? 2018

AIRBUS

CRASH RESISTANT FUEL SYSTEM

How to order the CRFS kit



Airbus Helicopters kit

(ROM price = / Lead-time =)

- Find the adapted H125 kit to the configuration of your aircraft on our Keycopter portal though eOrdering service
- Get immediately your price and delivery date
- Place your order

Standard Aero kit

- To register the Pre-Ordering form, a Sales Manager will contact customer: [Standard Aero information sheet & Pre-Ordering form](#)
- To contact Langley facility for additional information: <mailto:sales.hsna@vectoraerospace.com> or Tel +1 604.514.0388

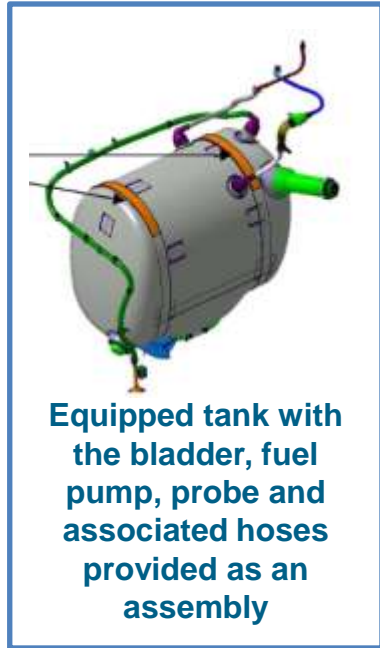


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CRASH RESISTANT FUEL SYSTEM

Kit content

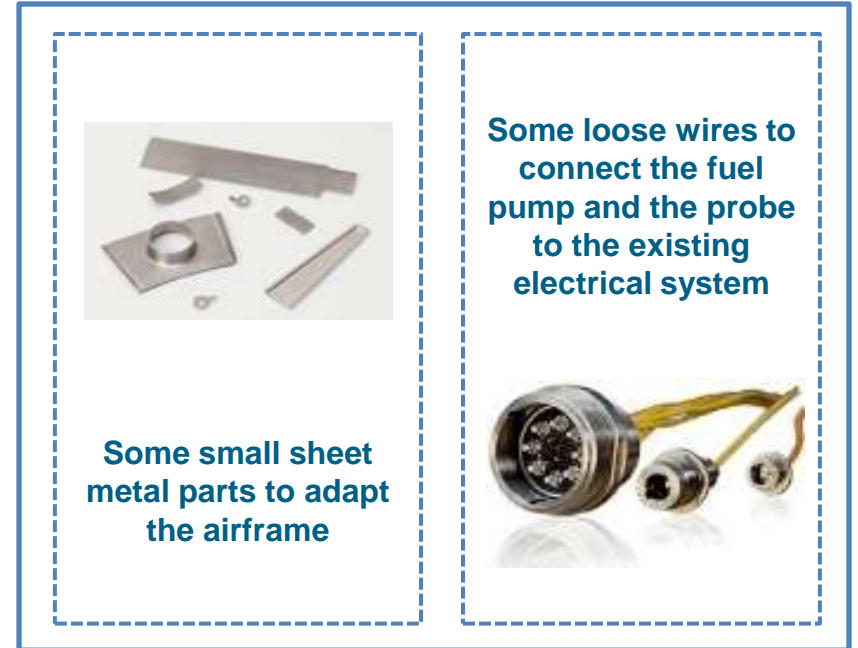
MAIN KITS



+



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HiCare

Important to you. Essential to us

Thank you for your attention

**For more information, please contact your regular Sales Manager
or contact us at <mailto:marketing-services.helicopters@airbus.com>**

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SAFETY ROAD SHOW - 2018



Evento de Promoção da Segurança Operacional (SGSO)

- ✓ Acidentes Organizacionais
- ✓ O Fator Humano e o acidente aeronáutico
- ✓ Prevenção de acidentes na manutenção
- ✓ Identificação de perigos e riscos
- ✓ Gerenciamento do Erro e da Ameaça (TEM)



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