

The logo for Survitec, featuring a stylized white 'S' icon followed by the word 'urvitec' in a lowercase, sans-serif font. The entire logo is set against a solid orange background.

Survitec

ANTI-G CAPABILITY

SUPERIOR GZ PROTECTION AND FATIGUE RESISTANCE



SURVITEC ANTI-G TROUSERS

FULLY QUALIFIED PROTECTION

Survitec began development of Anti-G Trousers in the late 1940s with the world's first fast jet g suit launched by 1950. For over 70 years, Survitec has helped global air forces achieve their critical safety goals by reducing the likelihood of mishaps attributed to G-LOC through use of the Anti-g Suit portfolio. This extensive range, informed by over 3 decades of combat experience, was designed to give pilots a higher performing, better fitting garment. The Anti-G Suits prevent g-force-induced loss of consciousness (G-LOC), by providing automatically applied counter pressure to the abdomen, thighs and legs in direct proportion to the g-loading experienced. This enables pilots to sustain up to 9G, ensuring that they can maintain the highest levels of performance during the most extreme aircraft manoeuvres.



THE RIGHT PROTECTION FOR ANY MISSION

The Survitec Anti-G Suit range consists of the Skeletal and Full Coverage trousers suitable for major global fast jet platforms. The Skeletal trousers were first launched in the 1950s as the world's first fast jet anti-g trouser. The Full Coverage trouser soon followed

in the 1980s to cater for platforms capable of even higher Gz performance. This range has been informed by over 7 decades of combat experience resulting in a comprehensive range of Anti-G suits.

	Full Coverage	Skeletal
Protection	9G+	Up to 7G+
Coverage	Full Coverage of Abdomen and legs	Protection across abdomen and legs, with knee cut-outs
Configurations	Step in or zipped	Zipped and Milspec (zipped)
Platforms	Current Fast Jet Programs	Current and Legacy Fast Jet Programs
Fasteners	Zip, lacing and buckles	Zip and Lacing
Support	Functional life support at 60,000 ft	
Adjustability	Adjustable lacing to suit winter and summer configurations	
Materials	Fire Retardant, Aramid Fabric	
Bladders	Replaceable internal bladders	
Fit	Tailor made technology for maximum comfort and fit	
Integration	Optimised and compatible for complete cockpit integration	
Inflation	Reinforced inflation hose to deliver air directly into the bladder from the aircraft system	



SKELETAL ANTI-G

MAXIMUM PROTECTION AND COMFORT

The Skeletal Anti-G Trousers are a high-performance, flame-retardant garment designed to enhance a pilot's performance whilst offering high levels of protection. The G-Trousers apply counter pressure to the abdomen, thighs and legs in direct proportion to the g-loading experience to prevent G-Force Induced Loss of Consciousness (G-LOC). The Skeletal trousers provide up to 7G of protection while maintaining high manoeuvrability in close aerial combat. Compatible with all legacy platforms, the unique design enables reduced pilot fatigue, improved situational awareness and low cost of ownership.

- Fully integrated, modular solution designed to maximise protection & optimise pilot performance
- Provides automatically applied counter pressure to abdomen, thighs & legs in direct proportion to the g-loading experienced
- Enables pilots to sustain up to 7g+ structurally, ensuring they can maintain high maneuverability in close aerial combat
- Comfortable ergonomic design optimises pilot comfort in the cockpit environment and mobility during pre-flight activities
- Environmentally resistant materials, including full flame-retardancy
- Universal design, compatible with legacy platforms
- MilSpec variations available for US standardisation



SKELETAL ANTI-G SUIT OVERVIEW

MATERIAL CONSTRUCTION

- 1 Manufactured from a specially developed high strength, lightweight Aramid fabric
- 2 Unique bladder design constructed of polyurethane-coated nylon
- 3 Inherently FR with an anti-static (carbon) content
- 4 Coated in an oleophobic finish to protect garment from wet weather and can also be cleaned with a damp cloth
- 5 Stitch pattern elongates with the inflating garment - minimising load on the stitches – improving durability

GZ PERFORMANCE

- 6 Provides counter pressure to the abdomen, thighs and legs in direct proportion to the g-loading experience
- 7 Durable, high performance Bladder:
 - Constructed using PU coated nylon and HF welding techniques
 - Internal cord routing provides gas passage for fast inflation times
 - PU elbow facility to attach inflation hose, can be positioned to optimise integration with the aircraft
 - Semi rigid tubing located at the abdomen and thighs to ensure clear gas passage in the areas restricted by the harness
 - Bladder oversized by approximately 10% to transfer pressures to the outer load bearing garment
 - Designed to prevent G-LOC and can sustain up to 7G

GARMENT FIT

- 8 Standard size range fits 99.9% of the population
- 9 Upward and downward facing pockets fitted in accordance with specific customers' requirements
- 10 Unique bladder cover design attached to waistband and legs with internal bladder extending across abdomen and legs
- 11 Cut outs provided at the knees for complete freedom of movement and comfortability
- 12 Single sliding fastener extends down the full length of the leg.

18 SIZES AVAILABLE, CAN BE TAILORED TO MEET SPECIFIC CUSTOMER REQUIREMENTS



TECHNICAL DATA

Weight (largest size)	2.2kg (4lb 8oz)
Volume (largest size)	8 litres at 5psi (23.9kPag)
Speed of inflation	7.3psi (48.7 kPag) in less than 1 second
Proof pressure (1.5 x working)	15psi (104.4kPag)
Burst pressure (2 x working pressure)	Minimum burst pressure of 26.3psi (183.048 kPag)
Flame resistance	4 second burn test
Electrostatic Discharge	Below 4kv
Period of wear	8 hours continuous comfort assessment carried out. Extensive in aircraft usage
Endurance	Structural strenght based on 45,000 inflations. The in service life, after a five year shelf life, in conditions ranging from -40 degrees c to +55 degress C with a relative humidity from 0 to 100%, shall be at least 3 years or 750 donnings and doffings, whichever is the greater.



SKELETAL ANTI-G PROTECTION

QUALIFIED & TESTED FOR FAST JET PLATFORMS

The Survitec Skeletal Anti-G Suit is fully qualified and optimised for use on a range of leading global platforms including training and front line combat fast jet aircraft. We examine every detail, from cockpit interface, to high speed G maneuvering and ejection. With over 7 decades of combat experience, the Anti-G Suit gives pilots a higher performing, better fitting garment.



COMPLETE INTEGRATION WITH LEADING GLOBAL FAST JET PLATFORMS FOR THE SURVITEC STANDARD ON EVERY FLIGHT

FULL COVERAGE ANTI G SUIT

The Survitec Full Coverage Anti-G Trousers (FCAGT) are a fully modular, integrated solution with multi-mission capability. The FCAGT encompass the lower body in a protective counter pressure relative to the G-load experienced and is proven to allow pilots to fly up to 9g without anti-G straining manoeuvre (AGSM). The trousers significantly reduce the risk of G-LOC in high speed aircraft, while offering greater manoeuvrability and higher Gz performance. The comfortable ergonomic design optimises pilot comfort in the cockpit with increased mobility during pre-flight activities.

- Improves and optimises pilot performance in high Gz environments
- Proven to allow pilots to fly up to 9G without anti-G straining manoeuvre (AGSM)
- Reduces the risk of GLOC in high performance aircraft capable of higher speeds, greater manoeuvrability and higher Gz performance
- Pilot fatigue decreased through reduction in need for the AGSM allowing multiple sorties
- Allows the pilot to focus on mission accomplishment and minimises the risk of loss of situational awareness (SA)
- Comfortable ergonomic design optimises pilot comfort in the cockpit environment and mobility during pre-flight activities
- Available in 'step in' and 'zipped' variants



FULL COVERAGE ANTI-G SUIT OVERVIEW

MATERIAL CONSTRUCTION

- 1 Garments manufactured from a specially developed high strength, low stretch lightweight material
- 2 Unique double layer design - outer most layer acts as a "sacrificial" layer protecting the inner most load bearing layer, maintains integrity of garment construction
- 3 Inherently FR with an anti-static (carbon) content
- 4 Superior seam strength
- 5 Stitch pattern elongates with the inflating garment - minimising load on the stitches – improving durability

GZ PERFORMANCE

- 6 Provides full bladder coverage over the legs and lower abdomen (cut-out at crotch and buttocks to maximize mobility and comfort)
- 7 Durable, high performance bladder:
 - Constructed using PU coated nylon and HF welding techniques
 - Internal cord routing provides gas passage to achieve fast inflation times
 - Semi rigid tubing located at the abdomen and thighs to ensure clear gas passage in the areas restricted by the harness
 - Inflation Bladder oversized by approximately 10% to transfer pressures to the outer load bearing garment

GARMENT FIT

- 8 Zips positioned down inside legs
- 9 Secondary closure buckles fitted down each leg underneath the leg zips
- 10 Lacing adjustment panels positioned at the rear waist, thighs and calves
- 11 Pockets fitted in accordance with specific customers' requirements
- 12 Minimal potential for seam slippage

19 SIZES AVAILABLE, CAN BE TAILORED TO MEET SPECIFIC CUSTOMER REQUIREMENTS



TECHNICAL DATA

Weight (largest size)	2.7 Kg (5lb 9.5oz)
Volume (largest size)	11.51 Litres at 5psi (34.5 kPag)
Speed of inflation	11psi (76.6 kPag) in less than 1 second
Proof pressure (1.5 x working)	19.5psi (134.4 kPag)
Burst pressure (2 x working pressure)	Minimum burst pressure of 26psi (179.2 kPag)
Flame resistance	Resistant to a 4 second burn test
Electrostatic Discharge	Below 4KV
Period of wear	8 hours continuous comfort assessment carried out. Extensive in aircraft usage
Endurance	Structural strength - 107,660 inflation cycles equivalent to a typical 10 years usage following UV Solar exposure equivalent to 10 years, humidity and moisture cycling and temperature transient cycling



FULL COVERAGE ANTI-G PROTECTION

QUALIFIED & TESTED FOR FAST JET PLATFORMS

The Survitec Full Coverage Anti-G Trouser (FCAGT) is fully qualified and optimised for use on a range of leading global platforms, including frontline and training fast jet and fixed wing platforms. The FCAGT is an enhanced Anti-G solution for greater pilot performance in high Gz environments. The comfortable and ergonomic design optimises pilot comfort in the cockpit, making the FCAGT the global preferred choice of Anti-G protection.



PILOT FATIGUE SIGNIFICANTLY REDUCED WITH MINIMAL RISK OF LOSS OF SITUATIONAL AWARENESS (SA) AS COMPARED TO LEGACY VARIANTS

INFORMED BY OVER 70 YEARS OF IN-SERVICE EXPERIENCE

Global Air Forces can achieve their critical safety goals, reducing the likelihood of mishaps attributed to G-LOC by using the Survitec Anti-G Suit portfolio. This extensive range, informed by over 7 decades of combat experience, was designed to give pilots a higher performing, better fitting garment.

TRUSTED BY OVER 20 AIR FORCES GLOBALLY



1950
WORLD'S 1ST ANTI-G TROUSERS DEBUT IN NYLON SKELETAL DESIGN

Qualified and in service with Royal Air Force for WWII



1996
QUALIFIED AND IN SERVICE WITH F-18 HORNET/HAWK



1998
QUALIFIED AND IN SERVICE WITH EUROFIGHTER TYPHOON



Increased Anti-G tolerance to 10G+



2000
FOURTH GENERATION OF SKELETAL G-TROUSERS



2010
QUALIFIED AND IN SERVICE WITH F-35 LIGHTNING II

Enhanced modularity capabilities



2015
QUALIFIED AND IN SERVICE WITH F-15

COMING SOON
CONTINUOUS DEVELOPMENT THROUGH NEXT GENERATION PROGRAMS



1970
SECOND GENERATION OF SKELETAL G TROUSERS



1980
THIRD GENERATION OF SKELETAL G TROUSERS

Introduction of flame retardant material and Ambidextrous Personal Equipment Connector (PEC)



1997
QUALIFIED AND IN SERVICE WITH F-16

Improved fire retardant (FR) material



STRINGENT TEST & QUALIFICATION PROGRAM

The Survitec Anti-G Trousers have undergone extensive test and qualification trials to ensure the product functions even under the most extreme circumstances.

EQUIPMENT LEVEL TESTING

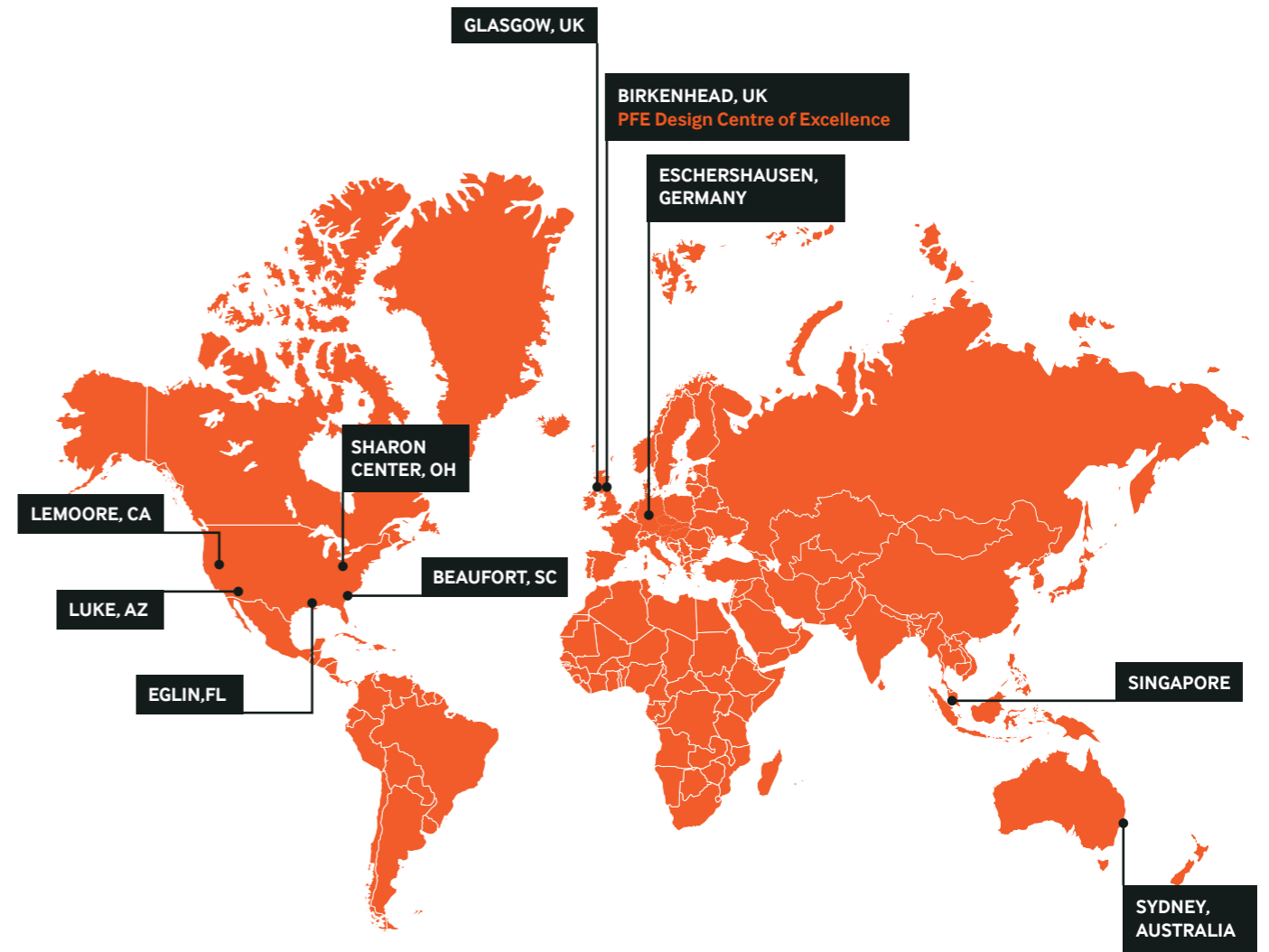
- Endurance
- Fungus resistance
- Endurance at temperature
- Inflation delay
- Proof pressure
- Rain
- Temperature shock
- Contamination resistance
- Volume
- Burst pressure
- Smoke density
- Flame resistance
- Effect of temperature
- Solar
- Colour fastness to U.V.

SYSTEM LEVEL TESTING

- Ejection tests
- Sea dragging
- Man /seat inversion
- Man seat separation
- Crash deceleration
- Pool trials
- Flame trial
- Emergency cockpit operations
- Canopy jettison
- Explosive decompression
- Period of wear
- Rescue egress
- Cockpit habitability
- Normal ground egress
- Emergency ground egress
- Man rating
- Man machine interface
- Parachute suspension
- Land dragging



SURVITEC AEROSPACE & DEFENCE LOCATIONS



3
LARGE SCALE
MANUFACTURING
FACILITIES

8
SERVICING & DISTRIBUTION
FACILITIES

4
PILOT FIT FACILITIES

US BERRY
COMPLIANT
MANUFACTURING

UK DAOS
APPROVED DESIGN
FACILITY



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