AEROMEDICAL AND SEARCH & RESCUE SOLUTIONS

EASA Part 21 Subpart J DOA | CASA Part 21M | CAAS Part 21H DOA

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A RICH HISTORY IN AEROMEDICAL CONVERSIONS

30 YEAR HISTORY IN INNOVATIVE AEROMEDICAL AND SEARCH AND RESCUE SOLUTIONS
OVER 30 YEARS OF HISTORY SUPPORTING AEROMEDICAL & RESCUE OPERATORS

When you operate or live in remote areas, or if the speed of response is critical in preserving life, an aeromedical evacuation aircraft or an air ambulance is often the only means to access emergency medical care. GVH Aerospace has a long history of supporting the aeromedical and rescue community over the past 30 years.

We are experts in the design of aeromedical equipment for quick aircraft role-change and permanent aeromedical conversions for fixed-wing aircraft and helicopters. Our solutions have been used and refined by pioneering organisations such as the Royal Flying Doctor Service and LifeFlight in Australia, one of the harshest and most demanding aeromedical environments in the world. Our equipment saves lives everyday, whether onboard a dedicated air ambulance, or a rapid role conversion helicopter for medevac or search and rescue.

We can design custom solutions or provide standard-fit equipment that are compatible with multiple aircraft and helicopter types, preserving your investment if you operate mixed fleets. Our equipment is used onboard the most commonly used fixed-wing and helicopter types including Beech King Air, Pilatus PC-12, Airbus H155 and H225, AgustaWestland AW109 and AW139, Bell 412, and Sikorsky S-92; and are designed to facilitate rapid role change out in the field and away from the maintenance base.

Our full range of aeromedical solutions include:

- Stretcher systems compatible with multiple aircraft and helicopter types
- Stretcher securing and mounting systems
- Medical cabinets
- Life support and medical equipment mounting systems
- Oxygen and medical gas distribution systems
- Fully motorised and electronically controlled stretcher loading devices
- Medical floors and wet decks for helicopters
- Paediatric solutions for aircraft and helicopters
- Specialist medical equipment carriage solutions including Intra-Aortic Balloon Pumps and Extracorporeal Membrane Oxygenation systems
CASE STUDIES

HELPING TO BRING THE BEST MEDICAL CARE TO OUR COMMUNITIES
The children’s charity acquired an AgustaWestland AW109SP configured to provide emergency medical evacuation services. The customer required the cabin to be reconfigured for paediatric medical evacuations and hospital transfers.

GVH Aerospace designed a new cabin layout, stretcher system and a stretcher loading system to replace the existing cabin EMS fittings. The stretcher can be configured to transport an infant incubator or for transporting small children and teenage children, with integrated life support equipment and medical gas storage. This helicopter has been in service since 2013, providing critical care coverage in southeastern England.

Improving Paediatric Care

Southwest UK Children’s Charity
AgustaWestland AW109SP Child Air Ambulance

Highlights
The children’s charity acquired an AgustaWestland AW109SP configured to provide emergency medical evacuation services. The customer required the cabin to be reconfigured for paediatric medical evacuations and hospital transfers.

GVH Aerospace designed a new generation AeroStretcher® stretcher system, complete with a medical oxygen system that is compatible with the operator’s fleet of heavy H225 and S-92 helicopters, and the fixed wing operator’s fleet of Beech King Air ambulances. This award winning system streamlines the aeromedical transfer process and minimises patient transfer across stretchers.

Improving Emergency Aeromedical Transfers

The global helicopter service provider was contracted to provide transportation services to the oil and gas fields, and to provide emergency medical evacuation services for personnel injured in the field.

GVH Aerospace designed the air ambulance conversion, providing different cabin layouts to accommodate different number of patients while maintaining the standard of care. A computerised Stretcher Loading Device (SLD) automated the task of stretcher loading, with electrical safeguards to ensure crew and patient safety during operation. The aircraft brought a quantum leap in the ability to provide medical care and entered into service in 2016.

Improving Medical Staff & Patient Safety

Australian Aeromedical Service Provider
Beech Super King Air B350 Air Ambulance

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Improving Medical Staff & Patient Safety

Australian Aeromedical Service Provider
Beech Super King Air B350 Air Ambulance

Highlights
The charity required a flexible cabin layout that can be configured depending on needs to transport different patients, and eliminate the need for the risky task of manually loading the patient and stretcher onto the aircraft.

GVH Aerospace designed the air ambulance conversion, providing different cabin layouts to accommodate different number of patients while maintaining the standard of care. A computerised Stretcher Loading Device (SLD) automated the task of stretcher loading, with electrical safeguards to ensure crew and patient safety during operation. The aircraft brought a quantum leap in the ability to provide medical care and entered into service in 2016.
SOLUTIONS TAILORED TO YOUR REQUIREMENTS

DEDICATED AND ROLE CHANGE AEROMEDICAL CONVERSIONS FOR FIXED WING AIRCRAFT AND HELICOPTERS
WORKING WITH YOU TO ACHIEVE THE BEST MEDICAL OUTCOMES

We understand that the best aeromedical solution is one that caters exactly to your needs. We are not just aircraft and aeromedical equipment designers. With a rich history of working with some of the best aeromedical professionals over the last 30 years, we are part of the aeromedical community that is committed to bringing the best medical care possible to the communities that we serve.

Whether it is a rapid role change EMS fit-out or a dedicated air ambulance conversion, our designers work closely with you to understand your aeromedical evacuation workflow and define your exact requirements. We bring to you the best practices that we have refined and evolved over 30 years of being part of the aeromedical community. We do not just provide you with products and Supplemental Type Certificates to fitout your aircraft. We examine the entire evacuation workflow and your mission requirements to provide the solution that best meets your needs and help provide the best medical outcomes to your patients.

From our revolutionary automated stretcher loading devices permanently fitted to the fixed wing King Air and Pilatus PC-12 air ambulances serving the whole of Australia, to role change aeromedical evacuation and search and rescue conversions of heavy helicopters such as the Airbus H225 and Sikorsky S-92, our solutions are tried and tested in some of the harshest operating environments possible.

We keep ourselves at the forefront of aeromedical technology. From improving the clinical outcome of transporting infants through pioneering the safe use of medical nitric oxide onboard pressurised fixed wing air ambulances; to our award winning AeroStretcher® aviation stretcher product family that provides a unique capability to transport patients between multiple aircraft, helicopters and road ambulances without the need for stretcher transfers; we are dedicated to helping the aeromedical community save lives.

Our turn-key solutions are scalable to your needs. We supply our aeromedical equipment complete with EASA or CASA Form 1, ready for embodiment by your appointed aircraft maintenance organisation. We provide the full spectrum of services from design through to supply of equipment, follow-up return-to-factory refurbishment and aeromedical crew training.
AEROMEDICAL & SAR PRODUCTS

FAMILY OF MODULAR AEROMEDICAL PRODUCTS CREATING TAILORED SOLUTIONS AND FLEXIBLE CABIN LAYOUTS
The medical gases stowage rack provides a safe and secure way to carry medical gas bottles such as oxygen bottles onboard the aircraft.

The standard stowage rack provides secure stowage of two D sized oxygen bottles on a floor standing mount that can be rapidly mounted on the cabin floor using the same revolutionary patent-pending multi-fit floor interface system. This secures the medical gas stowage rack to the seat tracks, and may be repositioned anywhere in the cabin to create flexible cabin arrangements depending on the mission needs.

GVH Aerospace has a wide range of different medical gas stowage options, from integrated medical gas bottle racks that is part of the stretcher plinth to seat track and stretcher bridge mounts for oxygen bottles.

For carriage of medical nitrous oxide, specialised stowage options, including gas leak detectors, are available.

The AeroStretcher® Mk IV modular emergency medical aviation stretcher system is a 16g qualified stretcher system designed to meet the most demanding requirements of all the compatible helicopters and fixed wing aircraft. It is available in a foldable variant, a standard variant with two different lengths and a litter stretcher variant to suit different requirements, all of which are cross compatible with all the accessories.

The AeroStretcher® is compatible with a wide range of fixed wing aircraft, helicopters and road ambulances, providing a single integrated solution to transfer the patient from the point of evacuation to the primary care facility while minimising unnecessary stretcher transfers.

The optional stretcher bridge is mounted at the foot end, with integrated IV poles and mounting solutions for medical and life support equipment including ventilators, ECG, suction units and infusion/IV pumps.

The AeroStretcher® stretcher system is secured to the cabin floor using our revolutionary patent-pending multi-fit floor interface system that allows the aircraft cabin to be rapidly reconfigured for EMS missions.

The medical cabinet provides a handy means of stowing medical equipment and controlled drugs, with single handed operation capability.

The medical cabinet can be configured with a seat cushion where the medical attendant can sit to tend to the patient during the cruise phase of the flight. The medical cabinet is mounted onto the cabin floor using our revolutionary patent-pending multi-fit floor interface system and may be repositioned anywhere in the cabin to create flexible cabin arrangements.

Dedicated cabin-conforming medical stowage cabinets can be designed and built on demand.

The GVH Aerospace medical cabinet is available as a combined lockable cabinet and an attendant seat, or as a lockable medical stowage box.

EMS configured aircraft often carry a wide range of controlled drugs onboard the aircraft. These controlled drugs will need to be stowed securely and will require single or double locking stowage provisions. The medical cabinet provides a handy means of stowing medical equipment and controlled drugs, with single handed operation capability.
Aircraft and helicopters dedicated to the EMS and air ambulance mission require the cabin interior to be fitted with different medical and life support equipment. These include IV hooks, infusion and syringe pumps, monitors, ECGs, defibrillators, suction units, ventilators, and medical sharps containers.

The medical and life support equipment cabin mounting solutions are designed to be tailored to our customer’s workflow. With dedicated wall or ceiling mounted rails, the medical equipment mounts may be repositioned as required. Our equipment mounts are designed to secure all the mounted equipment throughout the flight, including specialised equipment such as the Intra-Aortic Balloon Pump (IABP) and Extracorporeal Membrane Oxygenation (ECMO) systems.

Our equipment mounts are designed for single handed operations, allowing medical personnel to react rapidly to inflight medical emergencies.

The GVH Aerospace stowage pouches are designed to meet the specific needs of our customers. These stowage pouches are customised for our customer’s EMS and rescue cabin workflow, and equipped with stud or velcro closures that are suited to single handed operations.

Designed with the inputs of aeromedical and rescue professionals, our stowage pouches are in service with several world renowned aeromedical service providers, operating daily in the harshest environments including austere airfields.

Wet winching retrievals can bring up to 2 litres of water onboard the helicopter. Salt water and body fluids are harsh and corrosive to the aircraft structure.

The GVH Aerospace wet decks are designed to provide a protective barrier for the helicopter cabin floor as well as a padded, safe and protective work area for rescue and medical crew to recover a survivor or patient into the helicopter.

Our wet deck solutions are available for the most popular helicopters used in medevac and SAR missions and can be installed in minutes. The wet decks are manufactured from waterproof material and foam, and attach to the cabin floor through the floor cargo rings and do not require aircraft modifications.

The wet decks are equipped with built-in and tested hardpoints for safe restraint of cargo and crew, and have been providing trouble-free service and deployed in some of the harshest operating environments.
The transportation of patients with highly infectious diseases poses significant challenges in an air ambulance. The patient will need to be safely secured during the flight and isolated from the medical and aircrew.

The GVH patient transport container is a modified Commercial-Off-The-Shelf isolation container designed for transporting patients contaminated by Chemical, Biological, Radiological and Nuclear agents. This modified transport container is equipped with a removable 4-point aviation stretcher harness that connects to all variants of the AeroStretcher® aviation stretcher, providing a safe way of restraining the patient during flight.

The transport container is designed to operate under a slight negative pressure to contain the body fluids within the container, and are equipped with rubber gloves for accessing the patients securely without the risks of breaching the container.

The patient transport container can be disassembled and disinfected for re-use.

The AeroStretcher® double stretcher stacking mount provides a compact way of carrying two AeroStretcher™ stretchers.

Designed to be fitted onto the cabin floor using the same revolutionary patent-pending multi-fit floor interface system as the AeroStretcher® stretcher, the double stretcher stacking mount is ideal for transporting patients and casualties that do not require life support and medical equipment to be connected.

The double stretcher stacking mount is designed for a wide range of compatible helicopters and fixed wing aircraft. Once installed onto the seat tracks, it allows the aircraft to be rapidly converted for mass casualty evacuation.

The AeroStretcher® double stretcher stacking mount is compatible with all variants of the AeroStretcher® Mk IV aviation stretcher.

Designed for fixed wing or large helicopter air ambulances, the AeroStretcher® stretcher plinth provides a convenient mounting platform that raises the AeroStretcher® to a height where the medical team can attend to them while seated and without bending over. This provides a safer and more comfortable working height for the medical team, especially for long transit flights.

The AeroStretcher® stretcher plinth attaches to the cabin floor using the same revolutionary patent-pending multi-fit floor interface system as the AeroStretcher® stretcher. The modular plinth can be configured with integral oxygen and medical gas bottle stowage and distribution system, integrated suction unit, integrated 110V and/or 240V electrical inverters, or a stowage compartment depending on your requirements.

The AeroStretcher® stretcher plinth is designed to be installed in minutes and does not require permanent aircraft modifications or provisions unless integrated electrical inverters are required.

The AeroStretcher® stretcher plinth is compatible with all variants of the AeroStretcher® products.
The efficient execution of a search and rescue mission depends on a well configured cabin that provides sufficient seating capacity for the rescued personnel as well as a clear area for the rescue crew to work in.

The GVH Aerospace side facing crashworthy seats are designed for the Airbus H225 heavy helicopter and can be fitted in other compatible helicopters. These side facing seats can be folded when not in use to provide more cabin space, and are fitted onto existing cabin floor fittings and seat tracks.

Designed with rapid role change capability in mind, the GVH Aerospace side facing crashworthy seats conform to the latest and most stringent helicopter crashworthiness requirements, and increases the seating capacity of the search and rescue helicopter.

The standard aviation stretchers are designed to carry adult patients and are typically 1.8m in length. The positions of the back rest folding hinge and the four point harness are usually unsuitable for small children. While child and paediatric harnesses can be attached to the primary harness, for dedicated child air ambulances, dedicated child stretchers provide a safe means of transporting small children.

The GVH Aerospace all-in-one neonate and adult critical care stretcher can be configured to carry an infant incubator with supporting medical equipment. It can be alternatively configured with a mattress and harness to carry small children, or reconfigured for teenagers and adults.

The optional stretcher bridge for the all-in-one neonate and adult critical care stretcher is fitted at the more forward position compared to the AeroStretcher™, and positioned more appropriately for children. For dedicated EMS configured helicopters, the stretcher can be used as a normal stretcher without the bridge.

For permanently configured fixed wing air ambulances, a Stretcher Loading Device (SLD) is the most effective way of safely loading patients. Designed to provide a single-lift means of loading stretchers without the need for medical personnel to manhandle the stretchers, the GVH Aerospace SLD is a computerised, electrically operated system equipped with automatic safeguards that will stop the stretcher loading operation if it detects that the loading platform is not level.

The GVH Aerospace SLDs are designed to be operated in austere environments, powered by standard aircraft electrical power. This may be fitted onto the Pilatus PC-12 or the Beech King Air aircraft, or modified for operation on other aircraft.
Helicopter EMS and Search and Rescue missions are carried out regardless of the time of day and the weather conditions, often over difficult terrain and in inclement weather. Night Vision Goggles (NVGs) improve the safety of flight significantly at night. NVG operation requires compatible cockpit lighting systems. The NVG cockpit modifications require extensive post installation ground and flight testing before the aircraft can be approved for NVG operations.

GVH Aerospace provides the complete end-to-end NVG compatible cockpit lighting solutions, from initial installation through to testing and approval for flight use.
DESIGNED FOR COMPATIBILITY
ONE AEROMEDICAL SYSTEM FOR MULTIPLE AIRCRAFT TYPES