



# **COMMITTED TO RESCUING PEOPLE AND ENSURING THEIR SAFETY - SINCE 1919.**

for	near	ly	100

Dear Sir or Madam,

rly 100 years, the name AUTOFLUG has been inseparably linked to land, water and air rescue and safety of people. We feel obliged to continue the services of the medium-sized company which was founded by the aviation pioneer Gerhard Sedlmayr.

One of our most important tasks was and still is, to meet the challenges that arise at any time and to go above and beyond in terms of anticipation and development. Taking this approach is the only way in which it is again and again possible for us to enrich the market with innovative solutions for the rescue and safety of people.

Our innovative proposals not only in the field of rescue and safety but also for the flexible use of our aircraft cabins, makes us well positioned for the future. Our customers are of prime importance and they can rely on our products and services at any time.

If you would like to learn more about AUTOFLUG please contact us at any time or visit our website at www.autoflug.de.

Your AUTOFLUG Team.

- AUTOFLUG TODAY
- MODULAR CABIN CONCEPTS
- PERSONAL PROTECTIVE EQUIPMENT
- RESCUE SYSTEMS
- FUEL SYSTEMS
- AVIATION SYSTEMS
- SYSTEMS FOR LAND VEHICLES
- BEST SERVICE
- RESEARCH & DEVELOPMENT
- QUALITY MANAGEMENT
- EXPERIENCE THROUGH TRADITION



# AUTOFLUG - PIONEER AND DRIVER OF INNOVATION IN RESCUE AND SAFETY TECHNOLOGY.

#### **OUR MISSION**

Thinking Safety – true to this motto, AUTOFLUG has been a leading provider of products and services since the dawn of aviation, specifically focusing on rescuing people and ensuring their safety. As a globally recognized supplier and service partner of the international aviation industry and for defense technology, we develop, produce and service a wide range of textile, mechanical and electronic components and systems, amongst others. AUTOFLUG has decades of experience and expertise in the areas of rescue and safety, ergonomics, textiles, mechanical systems, precision engineering, electronics, software as well as measuring and control technology.

The versatility of our products and services is matched only by the versatility of the people who make up AUTOFLUG. Whether engineers or commercial staff, whether with humanities qualifications or diplomas in science, whether inventors or practical people – our employees work with passion and commitment to set new standards time and time again in rescue and safety technology, thereby rescuing people and protecting human lives. Today and in the future.



Extensive rescue equipment for almost every mission



Hardware and software development for measuring and control systems

# **AUTOFLUG - OUR PRODUCTS AND SERVICES.**



- AUTOFLUG airFLEX Flexible cabin solutions for transport aircraft and helicopters
- AUTOFLUG airFAST The fastest solution for multi-role capabilities of transport aircraft
- AUTOFLUG airSEAT Safety seats for crew and passengers in transport planes and helicopters
- AUTOFLUG landSEAT Textile safety seats for armored and lightlyarmored land vehicles
- AUTOFLUG landFLEX Flexible cabin solutions for armored and lightly-armored land vehicles



- AUTOFLUG proFLIGHT Comprehensive protection for the safety of flying personnel
- AUTOFLUG safeCHUTE Innovative solutions for load parachutes up to brake- and mountain shields
- AUTOFLUG safeBELT Restraint and belt systems for the safe transport of people and equipment



- AUTOFLUG fuelSENS Our wide range of fuel sensors: straight modular - flexible
- AUTOFLUG fuelDATA Highly accurate fuel management controllers and signal conditioners
- AUTOFLUG fuelPLUS Auxiliary tank solutions for increasing the helicopters range



- AUTOFLUG engineeringSERVICE Perfect system engineering - from the development to qualification and series production
- AUTOFLUG fullSERVICE Comprehensive service concepts - from MRO to pool and leasing solutions



Unique concept for maximum safety – safety seat systems for land vehicles



## A BROAD RANGE OF PRODUCTS ...

On the basis of decades of experience in rescue and safety technology, AUTOFLUG develops, produces and maintains a large number of products and system solutions which are ideally suited to one another, for safely transporting military personnel, parachutists and passengers as well as their equipment.

AUTOFLUG troop seats for transport aircraft and helicopters are comfortable at the same time as benefiting from a minimum inherent weight, and meeting the most exacting requirements in terms of safety, flammability and environmental compatibility. Flexible driver and troop seats for military land vehicles offer occupants optimum protection against the loadings which occur in mine and IED explosions, and crashes.



even as a sleeping cabin on long flights

MODULAR CABIN CONCEPTS FOR OPTIMUM OCCUPANT PROTECTION.

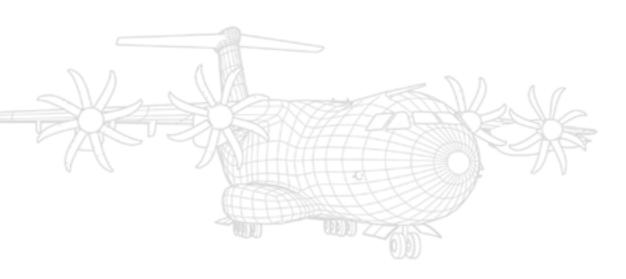
# ... FOR COMPREHENSIVE SAFETY SOLUTIONS

In addition to seat systems, AUTOFLUG offers various solutions for safely attaching stretchers and equipment for medical care on board. In addition, modular holders and containers are offered for securing equipment on board aircraft.

All AUTOFLUG products focus on rescuing people and ensuring their safety. With our comprehensive approach and the perfect interplay of modular components, we work closely with vehicle designers and users to create effective, complete solutions which can be integrated into a large number of aircraft and land vehicles providing the optimum of occupant protection.



**AUTOFLUG landSEAT**Driver's seat for heavily armored vehicles – textile cushioning system for optimum occupant protection



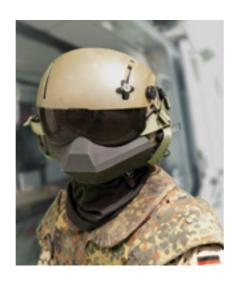




# MISSION-CAPABLE HIGH-END SOLUTIONS -TESTED UNDER TOUGH CONDITIONS.



**AUTOFLUG proFLIGHT** *FRS-3 aircrew rescue dinghy and personal survival pack (PSP)* 



**AUTOFLUG proFLIGHT** SGS dust and face protection mask



AUTOFLUG proFLIGHT

Emergency Parachute DURACHUTE - low-profile,
light-weight and extremely safe

# PERSONAL PROTECTIVE EQUIPMENT

The various types of personal protective equipment from AUTOFLUG share one common feature – people, their safety and survival are always the focus of attention. On land, water and in the air, they effectively support and rescue pilots and crew of aircraft and land vehicles in dangerous situations.

Our development and production teams feature specialists who, as former members of the German Armed Forces, are closely acquainted with the complex requirements and needs of customers and users. This is the only way that modular and mission-capable high-end solutions can be created by practical producers for practical users, and which can be relied on at any time when it really counts. Whether it is survival equipment, protective clothing systems or technical equipment for extended protection – designed for the tough conditions of practical use, our solutions have proven themselves in almost every climatic zone on the planet, all over the world.



**AUTOFLUG proFLIGHT** *NBC protective suit for flight personnel (AFP)* 



# THE MOST DEMANDING REQUIREMENTS UNCOMPROMISING QUALITY.

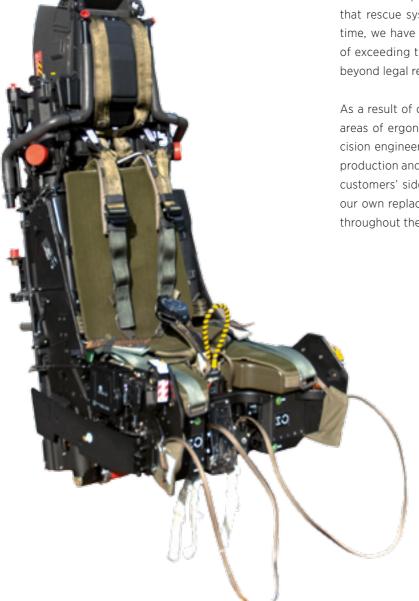
# **DEVELOPMENT, PRODUCTION AND SUPPORT**

For decades, AUTOFLUG has been a recognized partner and supplier and partner to the international aerospace industry. Aircrew all over the world entrust their lives to the rescue systems that we develop, produce and look after. We measure up to this significant responsibility day in, day out with all our passion, expertise and experience. To ensure that rescue systems can function safely and reliably every time, we have set ourselves the uncompromising challenge of exceeding the highest quality standards, even going far beyond legal requirements.

As a result of our diverse range of core skills such as in the areas of ergonomics, textiles, mechanical systems and precision engineering, AUTOFLUG has a high level of in-house production and 100% in-house maintenance. We stand at our customers' side with extensive logistical support as well as our own replacement parts procurement and stock keeping throughout the entire lifecycle of the rescue systems.



**AUTOFLUG fullSERVICE**Repair and maintenance of Martin-Baker ejection seat rescue systems



Martin-Baker ejection seat rescue system MK16A



# **REAL LIFE SAVERS**

Since 1958, AUTOFLUG has been repairing and maintaining all German Armed Forces' Martin-Baker ejection seat rescue systems at its Rellingen site. We proudly state that the fully automatic ejection seat rescue systems serviced by AUTOFLUG have to date saved the lives of more than 350 German Air Force and Navy pilots.

AUTOFLUG produces a wide range of rescue chutes and brake chutes, such as for the multinational TORNADO and EUROFIGHTER TYPHOON programs. To date, more than 180 TORNADO pilots from all nations involved in the program have been able to rescue themselves using rescue chute system produced by AUTOFLUG.

Moreover, from the day the company was founded, AUTOFLUG has been a developer and manufacturer of person restraint systems and harnesses offering the highest protection factor for use in aircraft.



**AUTOFLUG safeCHUTE**AUTOFLUG brake chute for the EUROFIGHTER TYPHOON





#### **AUTOFLUG AUXILIARY FUEL TANK SYSTEMS**

Part of the AUTOFLUG product portfolio are special auxiliary tanks to sustainably increase the possible flight times and the usage range of helicopters. These vary in their shape, size and specification depending on the request and helicopter type.

The systems are designed for temporary, rapid insertion into the fuselage and can be easily integrated into the helicopters existing onboard fuel management system. The challenge is a combination of the lightest possible structure that still prevents the spillage of fuel in a possible accident.



# RECOGNIZED SYSTEM EXPERTISE IN FUEL MEASURING TECHNOLOGY AND CONTROL ENGINEERING.



# AUTOFLUG fuelDATA

Signal processing and data concentration – all the information is collated and safely processed

## SIGNAL CONDITIONING UNIT

AUTOFLUG develops software and hardware solutions for signal conditioning units and data concentrators for precisely calculating the amount of fuel in the tank, as well as controlling pumps and valves. Parameters such as vehicle acceleration and fuel tank geometry are taken into account, as is compensation for fuel properties by means of suitable sensor systems. Digital filtering of sloshing movements in the tank as well as independent high and low-level evaluations are further features that make AUTOFLUG a recognized supplier of fuel measuring and control systems for aircraft and land vehicle manufacturers worldwide.

# **FUEL MANAGEMENT SYSTEMS**

AUTOFLUG has pronounced expertise in measuring and control technology. On this basis, we develop and produce a large number of modular components and sensor families that are expanded upon specific customer requirements to complex fuel management systems (fuel measuring and control systems) for use in aircraft and land vehicles. Our products include fill level sensors, sensors for high and low level warnings, compensators, water detectors, hardware and software for computer-aided measuring and control technology as well as display units. All components comply with the necessary safety, environmental, reliability and accuracy requirements according to their application area. For helicopters, our sensors offer the highest crash safety avoiding tank leaks.

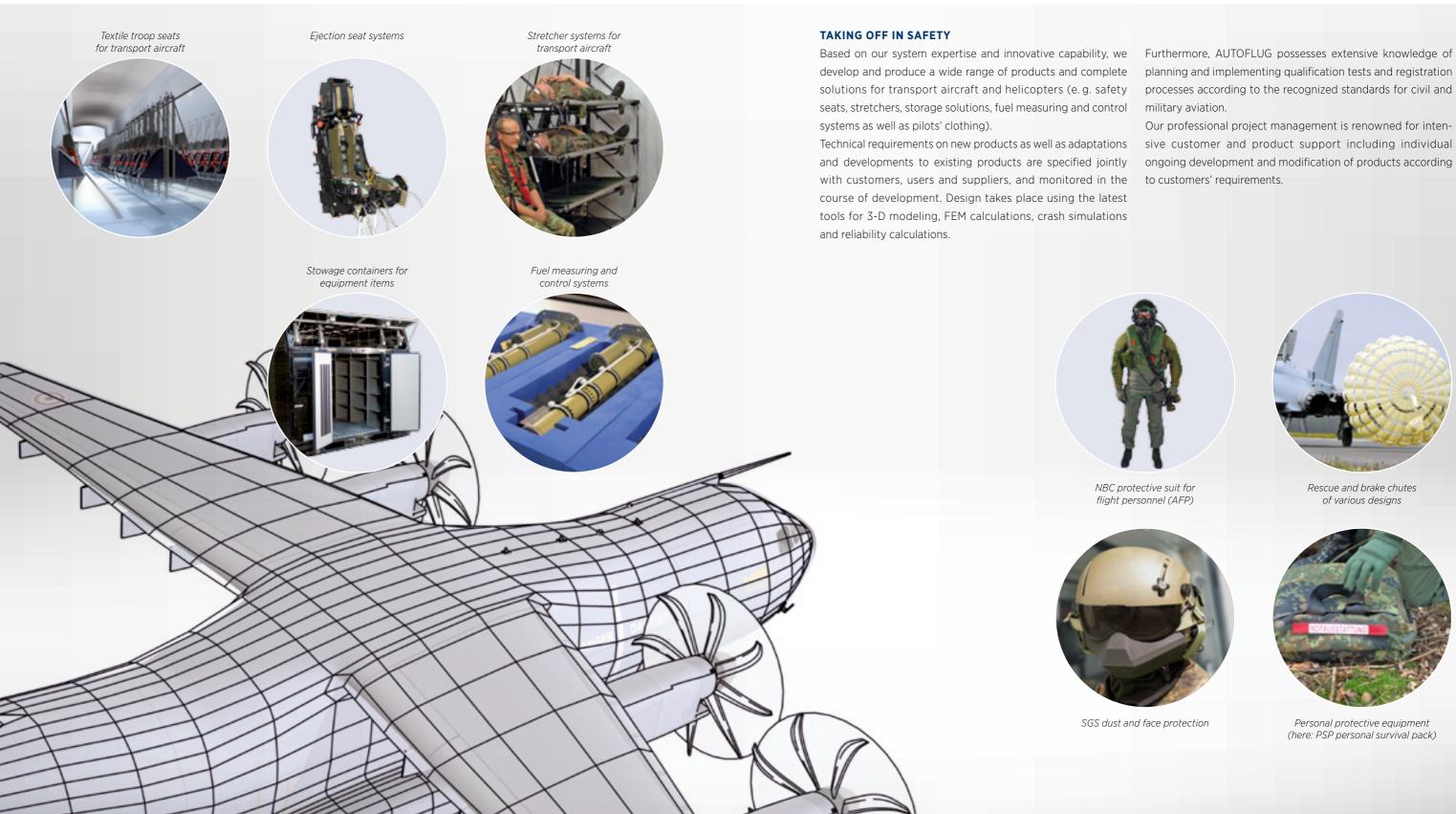
AUTOFLUG fill level sensors



## AUTOFLUG fuelSENS

Complex systems can be designed efficiently thanks to a module sensor concept and the unique flexible sensor

# **AUTOFLUG AS A SYSTEM PARTNER** FOR OCCUPANT PROTECTION IN AIRCRAFT.



Furthermore, AUTOFLUG possesses extensive knowledge of planning and implementing qualification tests and registration processes according to the recognized standards for civil and

Our professional project management is renowned for intenongoing development and modification of products according



Rescue and brake chutes of various designs



Personal protective equipment (here: PSP personal survival pack)

# AUTOFLUG AS A SYSTEM PARTNER FOR OCCUPANT PROTECTION IN LAND VEHICLES.



# **FOCUS ON TEXTILE EXPERTISE**

Protection of occupants in protected land vehicles is becoming more and more important in view of rapidly changing mission and threat scenarios. AUTOFLUG offers a large variety of safety seat systems which have already successfully proven their effectiveness in tough operating conditions.

AUTOFLUG safety seat systems can be flexibly adapted to the technical requirements of the particular types of vehicle. For example, this includes cooperating with customers and users to work out and integrate seat solutions for vehicle crews (including when wearing Future Soldier Expanded System (IdZ-ES) equipment).

AUTOFLUG supports customers in a spirit of partnership throughout the entire development sequence. This starts with preparing the first concepts and continues until series production at our facility in Germany. Equally, AUTOFLUG provides support in carrying out system-specific registration tests and producing the necessary documentation in close coordination with the registration authorities. It goes without saying that we also provide comprehensive advice in working out a logistics concept optimized for the customer.



Adaptation developments and integration of all components using CAD



Permanent dialog with the customer to create a joint understanding



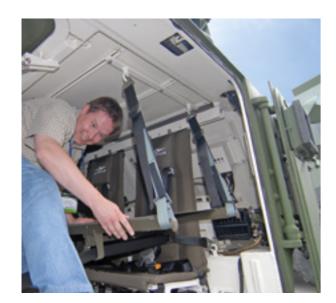
Carrying out system-specific registration tests and documentation



Textile expertise at the production site in Germany: minimum weight – maximum protection

# SERVICES & ENGINEERING LINES L

# LIFECYCLE SERVICES FOR MAXIMUM SYSTEM AVAILABILITY.

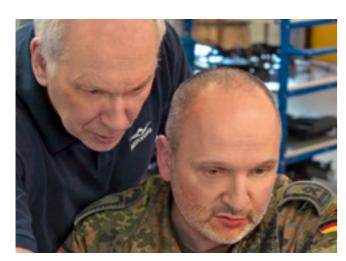


AUTOFLUG fullSERVICE On the spot support, e.g. during initial assembly or testing of prototypes

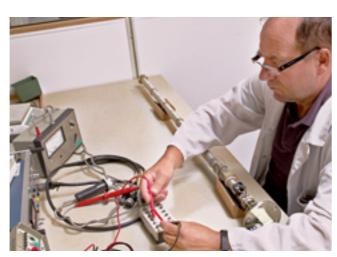
At AUTOFLUG, complex technical systems are always in the best hands, at any time and worldwide. As a reliable and expert process partner, we offer our customers from industry and armed forces the newest logistics solutions and extensive service support throughout the entire lifecycle of their technical systems.

## **DOCUMENTATION AND TECHNOLOGY**

In the course of technical and logistics support, we assist our customers in preparing logistics and repair concepts including independent definition and identification of replacement part requirements. At the same time, we analyze and optimize product drafts right from the development phase with regard to subsequent logistics backup possibilities and handling in support. We also offer complete obsolescence management including demand-driven rebuilds and new designs for ongoing projects. On request, we write and update technical documentation such as operating instructions, spare parts catalogs, maintenance and repair manuals and inspection logs as well as carrying out the modification service for documentation (on-call or permanently).



**AUTOFLUG fullSERVICE**The cooperation model with the German Armed Forces relies on dialog in a spirit of partnership



**AUTOFLUG fullSERVICE**Maintenance and repair of a large number of components



### **MAINTENANCE**

As a service partner, we take responsibility for upholding and developing the mission readiness of technical systems. This includes proficient maintenance of textile, mechanical and electromechanical components as well as procuring and stock keeping replacement parts. AUTOFLUG takes responsibility for packing parachute systems and preparing mission-capable emergency equipment for military task forces.

# **CUSTOMER SUPPORT**

At AUTOFLUG, great emphasis is placed on providing individual support to exacting customers. Our repair and support concepts are always tailor-made from individual repairs through to full-service contracts including technical support on the spot, right through to technical training, courses and seminars for users.

Since 2006, there has been close cooperation between AUTOFLUG and the German Armed Forces for repair and major overhauls of ejection seats used in the TORNADO and EUROFIGHTER TYPHOON weapons systems as well as special flight equipment.



As in all areas, service is conducted along the lines of quality management



# RESEARCH AND DEVELOPMENT FOR NEW, PRACTICAL SOLUTIONS.

### IN THE LEAD THROUGH EXPERIENCE

At AUTOFLUG, research and development traditionally occupy an important role. Today we are one of the most innovative companies in the rescue and safety technology industry.

Open exchange with one another establishes the creative freedom at AUTOFLUG for new product ideas and improvements. Years of experience and high levels of technical knowledge of our specialists, engineers and technicians in the fields of textiles, mechanical systems (lightweight construction, kinematics) and electronics (hardware and software for measuring and control technology) result in forming highly effective teams for specific projects. In close cooperation with customers, users and suppliers, this is where individually optimized and technologically leading products and system solutions are produced. Our customers' requirements as well as rescue and safety of users are always in the focus of our work.

Together with international research institutes, universities and companies, AUTOFLUG functions as a program leader in international research efforts, amongst other activities. Insights gained during these projects are put to use in implementing and managing industrial development activities.



**AUTOFLUG engineeringSERVICE**Adaptation developments and integration in close coordination with the user



**AUTOFLUG engineeringSERVICE** Static/dynamic configuration and simulation of seat systems and structures

## PERFECTION IN SYSTEMS ENGINEERING

AUTOFLUG serves the entire development chain from individual preliminary configuration, validation and documentation using CAD/FEM simulation including qualification, system configuration and model support, through to the series production maturity of military and civil products.

We have established and proven systems engineering to allow even complex technical systems to be developed and implemented successfully in projects. Current methods and tools for project management as well as risk and requirements management ensure that the functions required by the customer are fully implemented. This involves using the latest software solutions, such as for 3-D modeling, FEM simulation, dynamic analyses, reliability calculations and fault analyses.

Whether in ordered development programs or research projects with partners and institutes – our development department is the expert partner for solutions to questions relating to rescue and safety.



Practically oriented solutions for complex systems and projects are only possible through creative dialog





# ABSOLUTE TOP QUALITY FOR WHAT IS MOST IMPORTANT RESCUING PEOPLE AND ENSURING THEIR SAFETY.



Every day, people entrust their lives to products from AUTOFLUG. Absolute top quality and responsible actions are thus requirements that we are not prepared to compromise on – from the qualification and motivation of our employees, correct and efficient design of workplaces and processes through to involving subcontractors and suppliers in a spirit of cooperation. Our expectations for quality are a fixed feature of our company culture. This also includes us continuously examining and improving our products and processes, thereby ensuring sustained customer satisfaction.

Our quality management system is certified to ISO 9001 and EN 9100. Furthermore, AUTOFLUG is recognized by the Federal Office of Bundeswehr Equipment, Information Technology and In-Service Support (BAAINBw) as an aviation company for military aviation equipment, as well as by the German Federal Aviation Office (Luftfahrt-Bundesamt, LBA) as a manufacturing company according to EASA Part 21/G and a maintenance company according to EASA Part 145.

# SINCE THE DAWN OF AVIATION.

**1919** Aviation pioneer Gerhard Sedlmayr founds his "Spezialhaus für das AUTOmobil und FLUGwesen. AUTOFLUG" in the Johannisthal district of Berlin.

**1928** Cooperation with IRVIN starts, as a result of which AUTOFLUG develops into the leading manufacturer of rescue chutes in Germany.

**1955** Re-establishment of the company in Hamburg by Dr. Gerhard Sedlmayr, the son of the founder.

1958 Headquarters are moved to Rellingen in Schleswig-Holstein.

**1958** AUTOFLUG takes over maintenance and repair of Martin-Baker ejection seats in Germany, as well as production of components and subsystems under license.

**1989** Start of development and production of safety systems for helicopters.

**1992** Start of development of fuel measuring and control systems.

**2000** Start of development of protective equipment for aircraft crews.

**2002** Start of development of textile safety seats for military land vehicles.

**2006** Start of development of modular equipment concepts for aircraft cabins.

**2009** Start of series production of safety seat system for the A400M transport aircraft program.

**2014** Testing and qualification of the newly developed mine-protected safety seat for the PUMA armored personnel carrier.

»And it has always been my goal that pilots should be able to fly safely at any time ... with the possibility of rescuing themselves in urgent need.«

Company founder, Gerhard Sedlmayr





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