
Jetstream
GLOBAL
AEROSPACE
ENABLING THE FUTURE OF FLIGHT

Table of Contents

Letter from the CEO

The coming year will be an exciting one at Global Aerospace as we celebrate our 100th anniversary.

We could not be prouder of our history and achievements, but as we enter this special year, we are excited for the future and Global's next chapter.

RACHEL BARRIE
Group Chief Executive

Whilst we reflect on our years of doing what we love, this is the perfect opportunity for us to update our brand and unveil our new logo. This rebrand is our recommitment to the future of aviation and our core driver to enable the future of flight.

In this edition of Jetstream, we share that Sierra Space are also looking to the future of space exploration with their plans to harness the potential of microgravity, building factories of the future 250 miles above the Earth's surface for the benefit of life on Earth. Microgravity offers exciting new possibilities for enhancing the quality of life through breakthroughs in biotechnology, pharmaceuticals and advanced materials, to name a few.

ENABLING THE FUTURE OF FLIGHT

Sierra Space's Dream Chaser was selected by NASA to provide cargo delivery to and from the International Space Station (ISS). This represents a significant development as Dream Chaser returns to Earth on a runway, with a 1.5G landing enabling sensitive scientific experiments to be transported safely and allowing for rapid offloading of cargo.

Back on Earth, technology is developing just as quickly. Our interview with Reliable Robotics Chief Business Officer Myles Goeller discusses their latest innovations that enable the remote piloting of aircraft through all phases of flight operations. Their groundbreaking technology allows the pilot's role to transition from the flight deck to a ground control station. This in no way diminishes the pilot's role in the safe operation of the aircraft, but as a result of this increased automation, they can focus on managing flight plans and systems.

Alongside the excitement of new developments in aviation, we are keeping our feet firmly on the ground with renewed focus on controlling claims costs. The increase in claims costs in recent years, both on hull and liability, is something we are acutely aware of and working collaboratively with clients to manage whilst maintaining the highest levels of service. We are encouraging recurrency training across all parts of the organization and a culture of sharing best practices and experiences to help manage these rising expenses.

To wrap things up, although we remain dedicated to addressing the future needs of the industry, it wouldn't be right to celebrate our centennial without looking back at the early days of flight and our history. Go to the last page to see some of the photos from this bygone era.

Thank you for your support, and we look forward to continuing our journey together through 2024 and beyond.


New Look.
Same Commitment.

New Look.
Same Commitment.

An ancient Greek philosopher observed that the only constant is change. That is particularly true in aviation.

Our industry continues to evolve, and the pace of change today is breathtaking. However, we remain confidently ahead of the curve by anticipating and responding to the unique challenges and insurance needs of our clients worldwide.

FORWARD FOCUSED

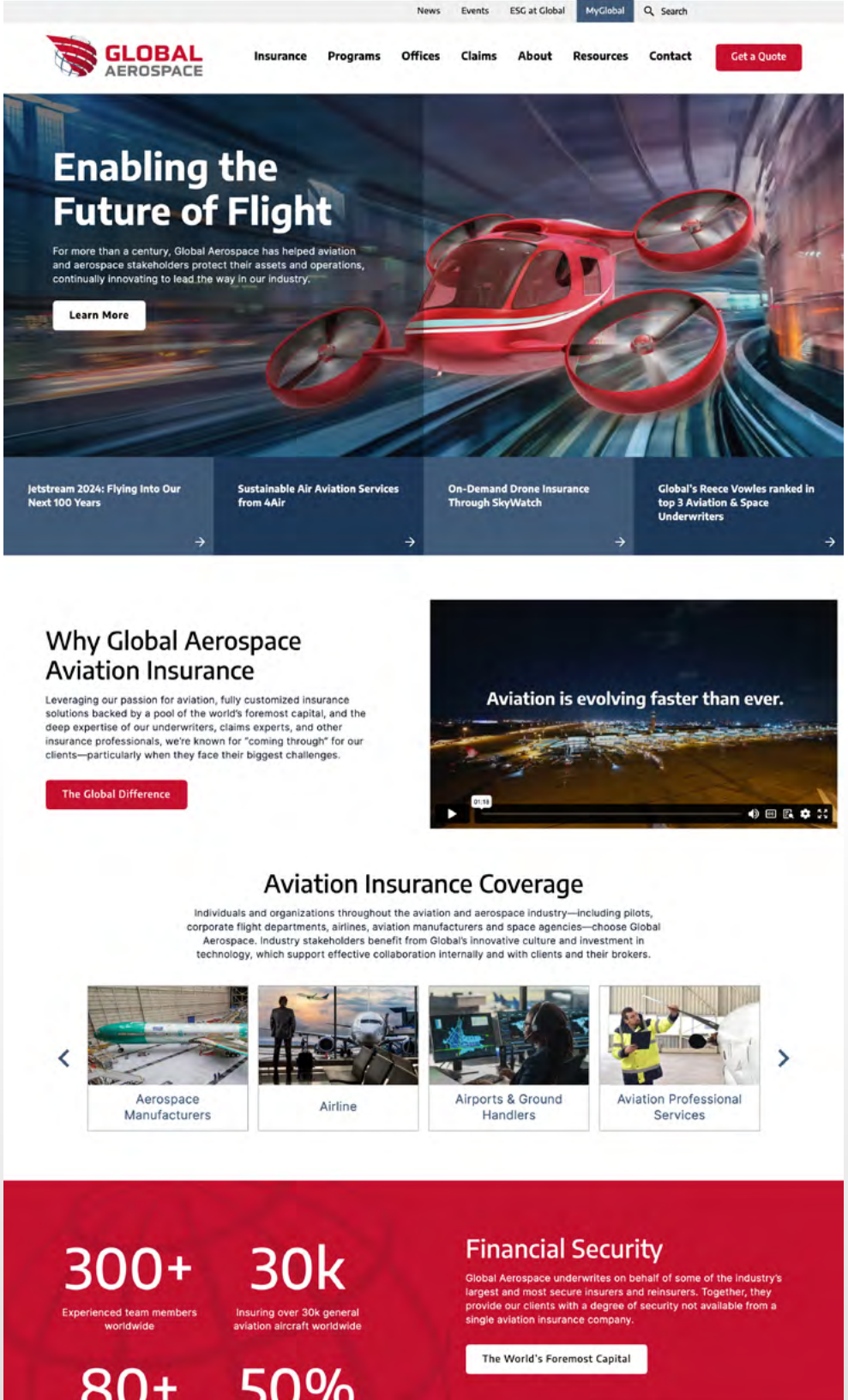
To reflect our ongoing commitment to assisting the aviation industry and empowering every person and organization to pursue their passion for flight, our branding has been updated. These exciting changes coordinate with our celebration of 100 years as a pioneer and leader in our field!

You will see iconic visual elements refreshed with vibrant, forward-focused designs and a website that provides even more useful features and information than before.

GLOBAL AEROSPACE

ENABLING THE FUTURE OF FLIGHT

View Logos Through the Years



HELPING CLIENTS THRIVE

Global continues to protect clients as a top insurance provider with access to a pool of the world's foremost capital.

Our passion for helping clients thrive is the unwavering driving force behind all we do.

That includes developing innovative products, finding easier ways for stakeholders to obtain aviation coverage, and other actions to empower policyholders and our business partners.

GLOBAL SPIRIT

Our updated brand will better capture the spirit of our organization and exemplify the passion for aviation of Global's underwriters, claims representatives, and other team members at offices around the world. But rest assured—the customized insurance solutions you have relied on will continue to provide industry-best protection for your assets and operations.

TODAY'S GLOBAL AEROSPACE:

New look. Enduring dedication to enabling the future of flight.

The Next Industrial Revolution Is Underway—250 Miles Up

The Next Industrial Revolution Is Underway—250 Miles Up

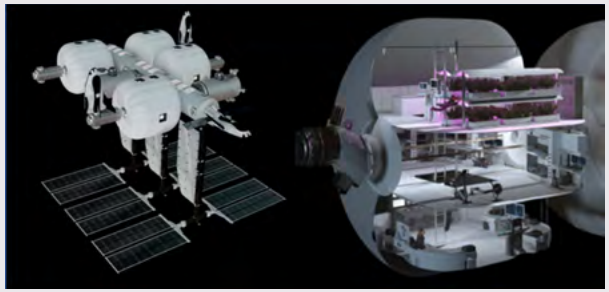
We are on the doorstep of the most profound industrial revolution in human history. The world is entering a new era of unprecedented economic activity marked by the transition from 60 years of space exploration to a future in which we extend our cities, communities, and factories into space.

Humanity's next chapter will be defined by unlocking the next great discoveries using new, commercial, on-orbit infrastructure just 250 miles above the Earth's surface to harness the incredible potential of microgravity. One leading commercial space company, **Sierra Space**, has plans to build and operate microgravity "factories of the future" in low Earth orbit (LEO) to harness the unlimited potential of space to disrupt terrestrial industries and benefit life on Earth.

THE MASSIVE POTENTIAL OF MICROGRAVITY

Microgravity holds the power to unlock massive potential. The fundamental gravitational forces experienced here on Earth, such as buoyancy, convection, and sedimentation, can be controlled in

BUILDING A TURN-KEY IN-SPACE BIOTECH CONTRACT RESEARCH ORGANIZATION



- Commercial platform for product innovation
- Catalyst for the next scientific breakthroughs
  - Cell cultures for predicting disease models
  - Organic production from adult stem cells
  - Direct drug research: Oncology and Longevity

- Runway capable landing
- Low G re-entry
- Instant access to precious cargo

- Seamless integration with terrestrial biotech ecosystem
- Reduces product development timelines

microgravity, enabling new breakthroughs in industries such as biotechnology and pharmaceuticals, advanced materials, health and wellness, avionics, education and more.

The near-weightless environment in LEO can help us find solutions to dramatically enhance the quality of human life and increase our longevity by years if not decades. It can greatly accelerate our ability to cure many diseases, combat the unpleasantries of aging and exponentially increase knowledge of the human body's diseases and aging mechanisms.

The International Space Station (ISS) changed our planet through a myriad of scientific advancements.

Fundamental disease research in microgravity is helping experts better understand Alzheimer's, asthma, heart disease and cancer. Researchers have invented new water purification systems, learned how to grow food, and made discoveries about muscle atrophy and bone loss. Since 2013, nearly all on-orbit R&D has utilized the ISS U.S. National Laboratory (ISSNL), where research and experiments involving tissue chips (engineered microsystems that represent units of human organs) and crystal growth has produced medically relevant results.

Economic returns from research and manufacturing in LEO in the biotech and pharmaceutical industries can be profound. Consider that approximately 10 million people die from cancer each year. Despite advances, there are no cures and no preventative strategies. It is estimated that a 1% reduction in mortality from cancer has a value of nearly $500 billion. Further, a cure for cancer would be worth about $50 trillion.

MOVING BOLDLY TO LEVERAGE LEO

Sierra Space is a leading commercial space company that is well-positioned to capture a meaningful leadership role in this burgeoning market.

Providing seamless access to a microgravity environment—which increases returns from innovation, improves the success rate for compounds in development and cuts development timelines—is a compelling value proposition.

The company is a first mover in this space, building both the transportation systems and on-orbit infrastructure to sustain humans living and working in microgravity for extended periods—enough time to make meaningful progress on the next products and innovations that will improve life on this planet.

NASA selected Sierra Space's Dream Chaser® spaceplane under a multi-mission contract to provide cargo delivery, return and disposal services for the ISS.

The first Dream Chaser vehicle, Tenacity, will begin operating cargo missions to and from the station starting in 2024. Dream Chaser is a game-changer for transporting critical microgravity experiments back to Earth because it returns from space on a runway like NASA's retired Space Shuttle.

A gentle 1.5G landing preserves sensitive science, and because the spaceplane operates on non-toxic fuels, cargo can be offloaded in 20 minutes. A crewed variant of Dream Chaser is also in development alongside human spaceflight and astronaut training programs to extend capabilities later this decade.

Meanwhile, “remote work” will never be the same as Sierra Space continues to make great progress on commercial space station platforms for human habitation and scientific research.

Engineering teams at Sierra Space and NASA have stress-tested subscale versions of the company’s inflatable space station technology, LIFE™ habitat, which launches on a conventional rocket and inflates on orbit to a structure three stories tall and 27 feet in diameter.

The inner pressure shell layer is composed of woven Vectran fabric that is stronger than steel upon inflation and tough enough to withstand the internal pressure required for the crew to live and work comfortably for extended periods in space conducting critical R&D and manufacturing. With its inflatable technology, Sierra Space offers one-third of the pressurized volume of the entire ISS in just a single rocket launch.

LOOKING AHEAD (AND UP) TO EXCITING INNOVATIONS

The ability to conduct research and manufacturing in microgravity is a step-change in the evolution of medicine, wellness, advanced materials, education, agriculture, and various other industries. As companies begin to adapt and implement it, understanding the potential to deliver value to the economy and society at large will help shape critical decisions.

The source of humanity’s next breakthrough foundational technology may, in fact, be just 250 miles away—right above our heads.

All images and renders owned by Sierra Space Corporation.

The Future of Autonomous Aircraft: Insights From a Leading Authority

The Future of Autonomous Aircraft: Insights From a Leading Authority

One of the ways Global Aerospace stays at the forefront of aviation and aerospace insurance is by continually engaging with the companies behind next-generation technological advancements. Based in Silicon Valley, Reliable Robotics is pushing the envelope on autonomy and automation in aviation.

We were pleased to talk with Reliable Robotics Chief Business Officer Myles Goeller about the company's innovative offerings and how new technology is affecting aviation generally. This article includes highlights from that conversation.

AVIATION HAS USED FORMS OF AUTOMATION FOR DECADES NOW. DO YOU BELIEVE WE ARE ON THE CUSP OF TRANSFORMATIVE CHANGE? IF SO, WHY NOW?

Advanced automation in transportation is at an inflection point where technology maturity and societal acceptance is bringing transformative change. Evidence of the latter is the rapid evolution and adoption of advanced safety and driver assist technologies in the automotive sector.

Supporting this change is the maturity of the technology required to fully automate and remotely operate aircraft. Among these technologies are high-integrity navigation systems that enable automated operations without terrestrial navigation aids, as well as autopilots that provide continuous engagement through taxi, takeoff and landing. Additionally, detection and avoidance (DAA) technologies are being developed that enable aircraft separation and collision avoidance, complemented by certified, bi-directional communications for command and control.

These advances are underpinned by air transportation's highly structured and regulated system that provides the ideal conditions for the development of advanced automation. Both the Federal Aviation Administration (FAA) and the European Union Aviation Safety Agency (EASA) have provided a clear framework for the certification of safe aviation systems and are proving to be supportive partners on the path to automation.

HOW DOES YOUR SYSTEM FUNCTION IN PRACTICE? TO WHAT EXTENT ARE THERE ACTIVE PILOTS IN THE LOOP?

Reliable Robotics aims to deliver a suite of onboard and offboard hardware and software that enables the remotely piloted operation of aircraft in controlled and uncontrolled airspace.

This falls into two categories:

1. **Continuous Engagement Autopilot** that fully automates control of the aircraft, enabling full flight, gate-to-gate automation.
2. **Airspace Integration Solution** enables remote operation of the aircraft by delivering the rest of the required ecosystem, including DAA systems, communication links and ground control stations (GCS).

Together, they create the system for safe automated flight.

The technology enables the transition of the pilot's role from the cockpit to the GCS. The remote pilot will not interact with a yoke/stick, rudder and throttle lever to directly manipulate control surfaces. The GCS will enable the remote pilot to meet the operational and functional requirements of instrument flight rules (IFR) operations using the flight management system (FMS) and managing the flight path through a customized panel.

This means that the remote pilot will focus more on managing systems and the flight plan and interacting with air traffic control (ATC)—not flying (i.e., aviating) the aircraft. That said, the remote pilot has final authority and responsibility for the operation and safety of the flight.

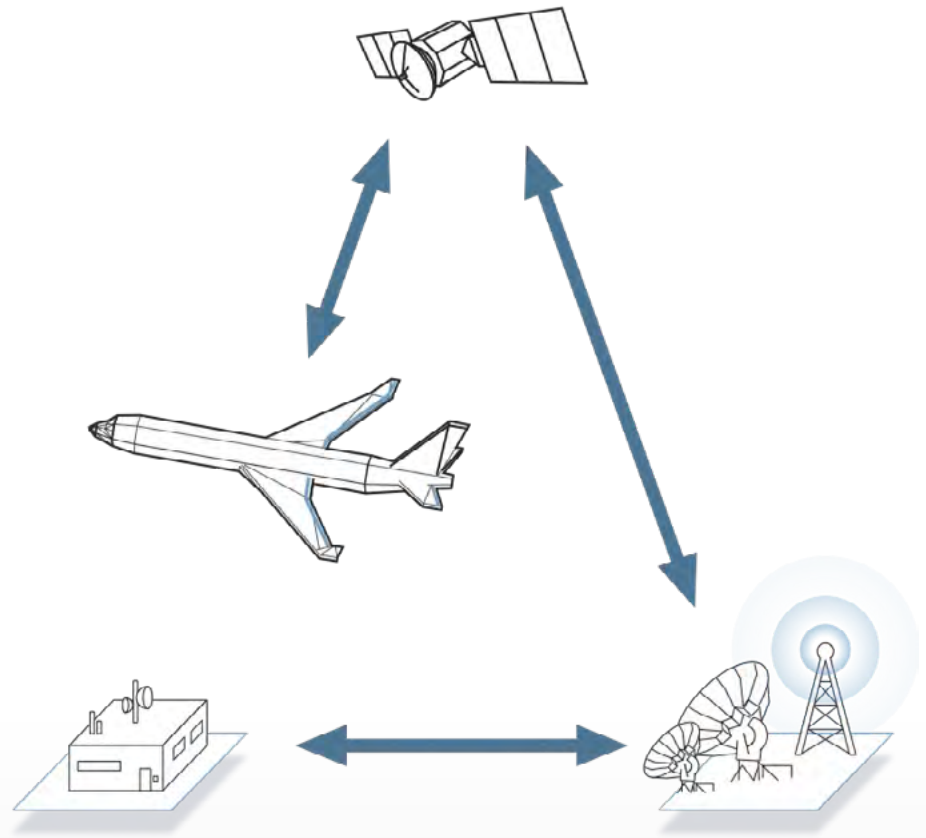
Pilots always have been and will remain the cornerstone of aviation safety.

HOW IS AUTOMATION USED IN EXISTING AIR SERVICES?

We enjoy an incredibly safe air transportation system today because of a steady stream of incremental safety improvements, including automation, and this will continue with full aircraft automation and remote piloting.

Most passengers are likely unaware of the level of automation that exists today. Systems such as automated flight controls, autopilots and FMS are standard in most modern large commercial aircraft.

Automation and autopilot systems assist the pilot's control of the vehicle, allowing the pilot to focus on broader aspects of operations (for example, monitoring the trajectory, weather and on-board systems).



C2 Link System (simplified schematic)

Current autopilot technology is, however, typically only used for the cruise portions of flights. Auto-land technology exists but is used in relatively few commercial aviation landings because it requires expensive ground-based instrument landing systems (ILS) infrastructure and has significant limitations. Certain aircraft have emergency auto-land systems if the pilot is incapacitated, but these systems are available for emergency use only.

At Reliable Robotics, we continue advancing aviation safety-enhancing technology.

This will include the use of a continuous engagement autopilot that's "always on" through all phases of aircraft operation, including taxi, takeoff, en route, approach, landing, taxi to a parking location and engine shutdown. At the same time, we are developing high-integrity navigation systems that enable automated operations without expensive terrestrial navigation aids.

These systems will significantly reduce the occurrence of common causes of fatal aviation accidents, such as controlled flight into terrain and loss of control in flight.

HOW DO YOU SEE THE EVOLUTION OF AUTOMATION BEING INTEGRATED INTO MAINLINE CARGO AND PASSENGER SERVICES?

The aviation industry will continue to incrementally adopt automation technology that increases safety and efficiency, as it has for the last 100 years.

Within the aviation industry, there are multiple programs focused on incremental automation of aircraft with the goal of reducing crew workload and potentially leading to reduced crew complement. This includes reducing the number of supplemental crew required for long-haul flights and potentially leading to single-pilot operations.

Most industry observers believe that defense and cargo markets will lead the adoption of advanced automation technologies, including reduced crew cockpits and uncrewed aircraft. These markets will help demonstrate the safety case that will be required for passenger operations.

SAFETY AND EFFICIENCY ARE TWO OF THE MAIN REASONS TO ADOPT AUTOMATION. CAN YOU DESCRIBE EXACTLY HOW THEY WILL MANIFEST THEMSELVES IN PRACTICE?

In terms of safety, advanced automation will significantly reduce the occurrence of common causes of fatal aviation accidents, such as controlled flight into terrain, loss of control in flight and runway incursion. High-integrity navigation systems make it possible to safely fly in lower visibility weather conditions without costly ground infrastructure. The “always on” autopilot also enables any aircraft to be remotely piloted with continuous engagement from departure gate to arrival gate.

From an efficiency perspective, advanced automation and remote piloting increase the productivity and efficiency of the two most important resources in aviation: pilots and aircraft. We group this efficiency into four categories.

1. **Pilots supervising flights remotely from a control center are more productive.** They spend less time traveling to and waiting for aircraft, and they can remotely operate aircraft anywhere in an airline’s network. This dramatically simplifies crew pairing and rostering and reduces reserve pilot requirements. We model productivity gains in the amount of flight hours a pilot can operate of up to 50-100% for large commercial airlines and 200%+ for smaller aircraft Part 135 and Part 91 operators.

2. **More productive pilots will provide the capacity required for the aviation industry to grow.** Remotely operated aircraft can be operated “anytime, anywhere” by remote pilots that deliver highly flexible and scalable piloting at lower cost, enabling airlines to deliver more scheduled and on-demand flights and grow their revenue.

3. **Automated aircraft capture the full potential of optimized flight planning and execution,** which lowers fuel consumption (by around 4-6%) and reduces engine wear and resulting maintenance costs.

4. **While we have not investigated the total weight reduction and increased payload** (weight and volume) that a remotely piloted aircraft will enable, removing the requirement for cockpit and crew support systems allows for significant structural weight and volume savings.

Over 400 people die every year in small aircraft in the U.S.
68-71% of these accidents could have been avoided with automatic safety systems.
(FAA, NASA, University of Tulsa 2022-2023)

THE PERCEPTION FROM MANY IS THAT YOU NEED A PILOT IN THE COCKPIT TO CREATE A FEELING OF SECURITY FOR PASSENGERS. DO YOU THINK SOCIETY WILL GET PAST THAT EVENTUALLY?

We are initially focused on the major aviation markets that do not have passengers, including cargo, defense and special missions and believe that demonstrating the safety of autonomous aircraft in those markets will pave the way for later adoption for passenger operations.

We believe that passengers will see the safety of autonomous aircraft, and more broadly will build their trust in autonomous vehicles on the ground and in the air. As with all advances in technology, we expect there will be early adopters who are more comfortable with changes.

PARTING THOUGHTS FROM MYLES GOELLER

At Reliable Robotics, we look forward to this next evolution of advanced automation in aviation.

The technology now exists to improve aviation safety and connect more communities with air service. An autonomous flight system coupled with pilots-in-the-loop will create new opportunities in the future for operators, pilots and the public.

Reliable's certification plan was accepted earlier this year, demonstrating the FAA's engagement and dedication to the process of certifying safety-enhancing technologies. Autonomy can and will be certified in the near term.

Managing Claim Costs: A Multi-Pronged, Collaborative Approach

Managing Claim Costs: A Multi-Pronged, Collaborative Approach

It is no secret that claim costs in the aviation industry have been rising steadily and significantly in the past few years. There are many reasons for this uptick. Some of them include general economic inflation, which has led to considerable increases in consumer prices and interest rates worldwide.

Additionally, supply chain issues have led to repair delays and increased expenses, while new technologies and more expensive materials in next-generation aircraft have contributed to higher repair costs. Furthermore, with respect to liability claims, the judicial environment, particularly in the U.S., has contributed to challenges in the risk of increased verdict amounts and transaction costs involved with defending lawsuits.

IMPLEMENTING COST-CONTROL STRATEGIES TO HELP OUR CLIENTS

The challenges our industry faces are real, and no single actor or organization can solve the entirety of the problem. However, as leaders in aviation insurance and with a specialist aviation claims team of more than 50 people worldwide, we are working diligently to reduce (or at least limit) claims costs while ensuring the quality of the work performed remains unmatched.

To achieve those savings, insurance providers must work in partnership with insureds and vendors to capture cost savings where possible without compromising safety or quality of repairs. Across the claims organization at Global, we continually strive to achieve the utmost level of efficiency and effectiveness within all areas of our claims handling strategy.

TARGETED ANALYSIS AND TRAINING

Everything in the aviation industry centers around a culture of safety. Safety is critical to keeping people secure and unharmed while flying, but a culture of safety and careful attention to it also helps reduce losses.

Continued focus on safety, such as through our SM4 Safety Program, is essential.

In addition, an open and creative approach to onboarding new employees and providing training—not just for pilots, but for all employees—helps minimize the number of claims and may also reduce their severity.

When it makes sense, it is important to work with insureds to review claims histories to identify trends and patterns, specifically for attritional losses. This can be particularly instructive when evaluating trends for operators or airports.

As an example, if there are certain locations or stages of the passenger process that seem to indicate increased risk of a claim, identifying that risk and determining a strategy for ameliorating it is a step in the right direction. Sometimes a process improvement, refresher training, or consultation with a human factors or safety expert can help prevent claims proactively before they occur.

Collaboration can also aid in minimizing risks that may occur within the aviation industry.

We are fortunate to work in a business where everyone is motivated to improve safety standards. The idea of sharing a "lesson learned," innovative safety measure or risk improvement idea with a business partner is always encouraged and fostered. By having regular conversations with our clients, we can act as the conduit to share thoughts and ideas that allow each to maintain its competitive edge whilst improving standards overall.

VENDOR COST MANAGEMENT

Managing vendor costs is particularly important when trying to reduce claims expenses. While lawyers and experts play a critical role in effectively defending an insured's product, services and reputation, there are certainly ways to work with lawyers and experts to try to efficiently manage those costs without compromising the quality of the defense. It is important that vendors understand that the costs they incur can translate directly into increases in premium for their own clients.

To that end, it is important for all parties—including the attorneys, insurers and insureds—to determine whether an early resolution to the claim is possible and then develop the strategy to reach this goal. Working with law firms to manage costs involves being clear about the work product expected from case inception to resolution.

While our legal teams are certainly required to perform the work necessary to effectively handle the matter, there are ways to engage with clients to deliver advice in a more concise format. Given these and other factors, it is essential to continue refining and communicating expectations to lawyers and other vendors about how to provide top-shelf service with minimal extra expense and effort.

Global recently hosted its first "legal provider day," where lawyers we regularly retain gathered to share ideas on best practices. It was encouraging to witness a group of lawyers who regularly compete so universally aligned in wanting to support the aviation sector and be part of a group effort to manage costs.

REDUCING ENVIRONMENTAL REMEDIATION EXPENSES

Another important area to examine when discussing efficiencies in claims management is cost-effective environmental cleanup. When incidents happen, they can result in discharges of materials or substances that must be cleaned up and safely disposed of to comply with environmental laws. Those laws can be particularly complex, depending on the jurisdiction in which the incident occurred.

Identifying local vendors nationwide who are committed to cost-effective disposal of wreckage and materials in a safe, economical and legally compliant manner is crucial. That effort can reduce the costs of long-term storage and transportation of materials.

COLLABORATING ON CLAIMS MANAGEMENT COST EFFICIENCIES

While Global has identified possible cost-saving options, we do not prejudge any of them. Listening to our customers about what is important to them, both before any incident occurs and at the inception of a claim, is our approach.

Understanding the options as well as alignment on procedures can allow for a more efficient repair or dispute resolution process and may even result in cost savings without compromising on safety or quality.

Our clients benefit from partnering with an insurer who can help solve their problems, manage their risk when incidents happen and allow them to focus on their business.

That is why we continue working proactively on effective ways to minimize claim costs.


AIRCRAFT BUILDERS CO
Annual Confe
Flying Into Our Next 100 Years

Flying Into Our Next 100 Years

You have likely seen the grainy footage of the Wright brothers achieving what many before had failed to accomplish: controlled, powered flight. Video of their successes and those of other early aviators make it clear that flying was a very risky endeavor at the time.

Had you been a spectator at Kill Devil Hills on December 17, 1903, you surely would have been on the edge of your seat as the Wright Flyer became airborne—albeit briefly. You may even have noticed Orville or Wilbur Wright, who both piloted flights that day, take a glance behind to marvel at the distance they had covered before turning back to steering the craft.

Just over a decade later, airplanes played a pivotal role in World War I, but they still featured low-powered engines and rudimentary navigation systems. Nevertheless, the British Aviation Insurance Group was formed following the war in 1924 to address the needs of the nascent air transport industry.

BAIG was "all in" on aviation long before the phrase became shorthand for exuberance! Chubb & Son and The Continental Corporation—two large, U.S.-based insurers—soon followed suit with equal enthusiasm and formed Associated Aviation Underwriters.

Various name changes and mergers took place through the decades until Global Aerospace was founded to unite the U.K. and U.S. entities just as the new millennium arrived.

GLOBAL'S NEXT 100 YEARS

As we embark on our second century of aviation insurance leadership, we are mimicking the Wright brothers—looking back at where we came from with great pride before looking ahead to the exciting future that awaits our industry.

The clothing and hairstyles may have changed from the early years, but there is an unseen characteristic that is a common denominator with our team members through the decades. Their passion for aviation and commitment to protecting pilots, flight crews, manufacturers and the entire "aviation family" has always been evident in their actions.

In celebrating our first 100 years, we are also keenly aware that we have been supported by many on the road to this truly remarkable milestone, and we offer our sincerest thanks to all our stakeholders, be it our clients, capital providers, producers and colleagues.

A century in and the story continues. We love what we do and care deeply for the safety and financial security of the stakeholders we protect. It was true when BAIG employees watched—with what had to be equal parts awe and anxiety—those early aircraft roar skyward. It is still true today as we witness companies turning their focus to emerging technologies and paving the way for advances that have the potential to benefit humanity in countless ways.

Where will Global Aerospace be in another 100 years? Only time will tell. But you can be sure our team will be looking back with the same combination of admiration and appreciation for their predecessors that we are experiencing today. As we do, we will also remain dedicated to earning the trust of aviation and aerospace stakeholders for the next 100 years.

GLOBAL AEROSPACE

ENABLING THE FUTURE OF FLIGHT

global-aero.com

GA.43.8 (1/2024)