THE PROFESSIONAL PILOT'S GUIDE TO

EFFECTIVE UPSET PREVENTION & RECOVERY TRAINING

AVIATION PERFORMANCE SOLUTIONS

HOW TO USE THIS GUIDE

WE HELP PILOTS BRING EVERYONE HOME SAFELY

We hope you find this Buyer's Guide to Effective Upset Prevention & Recovery Training to be useful in your selection of an Upset Prevention and Recovery Training (UPRT) provider. Asking the right questions and then verifying provider responses through an on-site evaluation and inspection can save your flight department significant time and money while ensuring the provider's service, professionalism, and facilities meet your department's elite standards. The document that follows gives guidance, based on the **6 Critical UPRT Program Implementation Factors** for effective UPRT, on what to look for in a qualified, industry-compliant and safe UPRT provider. Our team at Aviation Performance Solutions (APS) would be honored to be included in your rigorous selection process and be compared to any other UPRT provider in the world today.

ELITE INSTRUCTORS

Industry regulatory agencies such as ICAO and the FAA agree that a **well-qualified instructor is the most critical element** of safely administered UPRT that effectively teaches resilient skills to overcome Loss of Control In-flight (LOC-I). The experience of your instructor is the single greatest factor in managing the inherent risk of safely delivered on-aircraft UPRT. Note: APS instructor qualifications, experience, and expertise are vastly superior to the following minimums.

- ☐ **Did the UPRT instructors have operational positions in their past industry experience which required all-attitude/all-envelope expertise? If so, how much experience?**

  This should be extensive professional all-attitude experience — at least four years and 500 flight hours, such as can be gained through being a military instructor pilot, operational fighter pilot, military test pilot school graduate focused on extensive stall/spin testing, surface waiver ICAS-certified air show performer, or advanced (or higher) level aerobatic competitor.

- ☐ **Do the UPRT instructors receive UPRT-specific training? How much experience do they have with the dedicated delivery of industry-compliant UPRT in-flight?**

  This is critically important. Keep in mind, UPRT is not aerobatics, not military training, not test flying; it's UPRT per ICAO as a minimum. Instructors must have standardized training according to industry-recognized best practices or a poor outcome such as negative training could result.

- ☐ **How much experience do the instructors have in the instructional role?**

  Look for at least four years and 200 hours of dual aerobatic / all-attitude instruction given.

- [ ] **What has the organization done to standardize instructors?**

  Without standardization, the quality of instruction will be up to the luck of the draw as to which instructor you get, how effective they might be, and whether or not they diverge from proven industry techniques and best practices (if they know them).

- [ ] **Do some or most of their instructors have any experience with transport category operations such as airline or corporate flight operations?**

  This is crucial for putting lessons learned and UPRT concepts, techniques and strategies into the context of the flying that your company does and being able to relate to the threats that exist in flight operations such as yours.

INTEGRATED TRAINING PROGRAM

The most effective, safe, and long-lasting upset training is accomplished through an integrated combination of industry-approved loss of control academics, proper use of all-attitude piston and jet airplanes, and expertly integrated advanced flight simulation training devices when appropriate. The tactical integration of these three training mediums provides an engaging and compelling learning environment required to ingrain powerful and resilient UPRT skills.

- [ ] **Does the training program properly integrate academics, on-aircraft instruction and advanced flight simulation as needed and as recommended by International Civil Aviation Organization1 (ICAO) and by the International Air Transport Association2 (IATA)? Can they objectively demonstrate this integration?**

  Each of these training platforms has inherent strengths and weaknesses. When properly integrated, they capitalize on the strengths and overcome the weaknesses of each other, allowing pilots to safely ingrain a resilient skill set to prevent or overcome an airplane upset.

- [ ] **Does the training program adhere to a building block approach that progressively develops knowledge and skills to facilitate the application of new concepts and abilities? How?**

- [ ] **Can the school credibly speak knowledgeably to both 'negative training' and 'negative transfer of skill' and how those risks are comprehensively addressed in their training program?**

- [ ] **Does the school offer a robust online training program for pilots and flight departments to access advanced academics and continuing education?**

TRAINING INTENSITY

In an unexpected airplane upset, accurate decision-making, resilience and measured reaction times are critical. There are two dimensions to training intensity critical to a successful UPRT program: 1. Training frequency over time and 2. In-training intensity to overcome human factors.

- [ ] **Are enough flights provided to ensure training vs. exposure?**

  Preferably a minimum of four (4) on-aircraft flights over at least 2.5 days are required to ensure UPRT proficiency, retention and accessibility to effective skill sets in a crisis that may occur months or years after training. Three or fewer flights in two days or less substantially increases the risk to the graduating pilots of NOT being comprehensively prepared to overcome the LOC-I threat if exposed to a real-world crisis.

- [ ] **Does the program require on-aircraft training over multiple flights to overcome the incapacitating human factors associated with an unexpected upset?**

  In an unexpected airplane upset, the human factors responses of startle and surprise can undo a pilot's ability to think clearly and respond accurately. Intense on-aircraft training, which puts pilots in upset situations and requires them to repeatedly overcome the associated fear, confusion and uncertainty encountered, allows pilots to become familiar with techniques necessary to overcome the human factors related to operating beyond the normal flight envelope.

INDUSTRY VETTED AND BEST PRACTICES COMPLIANT

Addressing regulatory-defined training content is a bare minimum and not optional. Some UPRT providers may skip what they think doesn't matter, which is unacceptable. Over the past three decades, APS has worked closely with regulatory agencies and oversight organizations such as ICAO, EASA, IATA, NBAA, and the FAA to help them establish guidance and best practices for safe and effective Upset Prevention and Recovery Training. UPRT training at APS is in strict compliance with these guidelines and beyond, adhering to the strictest safety standards and proven training practices. Most importantly, UPRT by APS also includes critical features these organizations have missed.

- [ ] **Does the company have a formalized syllabus that has been reviewed, approved and monitored by the applicable regulatory agency?**

- [ ] **In the US, is it an FAA Part 141 Flight School?**

- [ ] **In the EU, is it an ATO formally approved to provide EASA Advanced UPRT FCL.745.A evidenced by a producible certificate?**

- [ ] **Does the syllabus adhere to the industry-standard Airplane Upset Recovery Training Aid (AURTA) - Revision 2, the ICAO UPRT Manual, and IATA UPRT Best Practices?**

  These industry references are well-vetted and accurate. In the field of UPRT there are many theories and notions that have not been properly reviewed by aircraft manufacturers, safety agencies and other UPRT experts. Even slightly incorrect instruction can pose significant risks. These risks must be eliminated by adhering to the information and techniques advocated in the AURTA and through the stringent application of Safety Management System (SMS) principles.

- [ ] **Is the course of instruction designed based on actual accident rates and LOC-I threat distribution rather than academic or hypothetical threats, or restricted to a set of historical scenarios? Does the training program time allotment and emphasis reflect the threat as demonstrated in actual accident statistics?**
- [ ] **Has the Training Program been vetted by industry UPRT experts to include a critical review of academic content, practical training principles and demonstrable margins of safety? If so, how was that accomplished?**

  Claiming internal-only expertise is not acceptable.

- [ ] **Is the company audited by an industry-recognized third party safety organization to ensure compliance with Safety Management System best practices? How many years have they been in good standing?**

  2 Years is a bare minimum.

- [ ] **Does the company hold formal, company-wide safety meetings? How often?**

  Twice annually should be minimum (quarterly is strongly preferred). Ask for proof.

- [ ] **Is there formal training provided on safety procedures such as parachute usage, airplane egress and facility safety?**
- [ ] **Does the Insurance Industry have sufficient confidence in the prospective UPRT provider to partner with them to provide financial incentives for training? Do insurance providers recognize the substantial benefit to safety provided by the UPRT providers services through acknowledgement and recommendation of their training to their insured pilots and/or flight departments?**

PURPOSE BUILT PLATFORMS

Together with expert instructors following a comprehensive training curriculum, safe all-attitude aircraft that are fully recoverable from inadvertent high-G control inputs and spins assure the delivery of a complete program while guaranteeing a margin of safety essential to safe and effective UPRT.

AIRCRAFT

- [ ] **Are the on-aircraft UPRT airplanes certified in the Acrobatic Category?**
- [ ] **If experimental former military airplanes are being used, were they originally designed for full stall training and all-attitude maneuvering? If not, how were they designed and certified? Are they a Part 23 or 25 equivalent?**

  Unlike single engine Part 23 airplanes, Part 25 airplanes are only certified to the first full stall characteristic and don't necessarily have a demonstrable margin of safety to conduct full stall training. If doing full stalls during UPRT in a Part 25 airplane, or multi-engine Part 23 airplane, what additional series of validated flight tests were accomplished, in what conditions and by whom?

- [ ] **Is the flight video taped (with audio) for later review? Are you allowed to keep the video? Is the video HD?**

- [ ] **Are the aircraft well maintained? Are all the logbooks in order?**

  Investigate the level of maintenance conducted as UPRT flight operations are more vigorous than most flight operations. A comprehensive and compliant maintenance/inspection schedule prevents mishaps and detects issues early.

- [ ] **If the provider is not a regulatory-monitored school, such as a Part 141 Flight School in the USA or Approved Training Organization (ATO) in Europe, do they have a robust and recognized Safety Management System such as IS-BAO? If so, when was it last audited? Is it third-party audited or does the school only self-audit their safety program?**

SIMULATORS

- [ ] **If Flight Simulator Training Devices (FSTDs) are used, are they operated within the Validated Training Envelope (VTE) for that device? If not or they don't know, do the instructors know what a VTE is?**

  How do they use the simulators for UPRT? Can they speak convincingly of the critical importance of simulation in UPRT while identifying specific features and benefits?

- [ ] **Have their instructors been trained on simulator fidelity limitations?**

  Expanded envelope simulators can offer increased training capability for some UPRT elements. Quality, duration and comprehensiveness of instruction and the program are critical. Simulator-only UPRT is not generally considered a full solution.

INITIAL & RECURRENT TRAINING

The intensity of the initial APS UPRT program establishes a long-term, renewable knowledge and skill foundation that can be completely refreshed every year in a short, one-day recurrent course.

- [ ] **Does the organization offer a cost-effective recurrent training option?**

  When your flight department sends pilots for training, the cost not only includes the amount spent on training, but also the loss of time and revenue in having pilots away at training.

INDUSTRY LEADERSHIP AND REPUTATION

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- [ ] Review testimonials such as Google Business reviews and talk to graduates. Other pilots who have received training with a particular provider can provide important insights about their Upset Prevention & Recovery Training (UPRT) experience. Was the UPRT provider's training technically beneficial and professionally conducted? the customer pilot learn new information or techniques effective in their airplane type that provided significant value and effective training that could genuinely make a difference in a LOC-I situation?

- [ ] Has the flight training organization been involved in industry UPRT efforts in education, alignment, standardization, and harmonization? Are they still involved?

- [ ] Have they worked in concert with aircraft manufacturers and training providers in determining recovery procedures and training policy? Do they maintain on-going relationships to validate their training? If so, how?

- [ ] Has the flight training organization participated in industry working groups and collaborated with regulatory agencies? Have they provided inputs that have helped to shape industry training practices and standards?

CUSTOMER EXPERIENCE

- [ ] Does the company have a dedicated team to ensure a positive training experience beyond just the instructors providing the training? Do they have an administrative/hosting support team to address your needs when not flying or briefing?

- [ ] Is there a dedicated full-time maintenance support team readily available? Is there a safety crew that ensures your entry and exit to the airplane are in accordance with airfield procedures and commensurate with safety?

- [ ] Are the facilities clean, comfortable and designed to enhance and support upset training including all platforms such as aircraft, simulators and academics?

BEST VALUE TO SAVE LIVES

- [ ] The cost of UPRT may not be directly related to the value of the training received. If you look at the volume of hands-on training received, the overall expertise of the training staff, and the effective integration of training platforms and resources along with the recurrent program, which UPRT provider provides the greatest training benefit for the cost?

ABOUT APS

With more years of experience and more students trained in UPRT than any other provider, APS UPRT has resulted in hundreds of lives saved. Our delivery of exceptional training is accomplished by adhering to industry-approved and time-tested best practices, ensuring standardization at the highest level of quality, and providing excellent customer service.

We have provided training for flight crews of virtually all aircraft manufacturers and airplane types and for hundreds of corporate flight departments as well as flight schools and major US legacy airlines. Contact us for a complimentary course overview to see if APS UPRT is the right fit for your organization.

"Every Pilot Trained – In Control – All The Time"

AVIATION
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