counties for the 504 Rural Pilot, which may not be the same as the rural areas identified by the U.S. Department of Agriculture.) SBA Regions are defined as follows:

- Region I: Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, and Vermont
- Region II: New York, New Jersey, Puerto Rico, and The U.S. Virgin Islands
- Region III: Delaware, Maryland, Pennsylvania, Virginia, Washington, DC, and West Virginia
- Region IV: Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, and Tennessee
- Region V: Illinois, Indiana, Michigan, Minnesota, Ohio, and Wisconsin
- Region VI: Arkansas, Louisiana, New Mexico, Oklahoma, and Texas
- Region VII: Iowa, Kansas, Missouri, and Nebraska
- Region VIII: Colorado, Montana, North Dakota, South Dakota, Utah, and Wyoming
- Region IX: Arizona, California, Guam, Hawaii, and Nevada

In making, closing, servicing, or liquidating a 504 Rural Pilot loan, CDCs must follow all other Loan Program Requirements under the 504 Loan Program, except that 504 Rural Pilot loans cannot be made using the CDC’s delegated authority (i.e., PCLP or ALP authority). Although, as described above, CDCs will not be required “to demonstrate” that they can adequately fulfill their 504 program responsibilities for each 504 Rural Pilot loan before making the loan, CDCs will still be expected to fulfill all such program responsibilities with respect to these loans.

Unlike a Multi-State CDC, a CDC making a loan under this pilot will not be required to establish a separate loan committee to cover the State in which the rural 504 Project is located. In addition, the CDC must advise the local District Counsel where the 504 Project is located which Designated Attorney, or other attorney, will be closing the loan. (The attorney must be licensed in the State where the loan is being made.) CDCs should note that the CDC may not close the loan as an expedited loan unless the attorney is a Designated Attorney licensed to practice in the State where the 504 Project is located. The CDC is responsible for notifying the SLPC that a 504 loan application is being submitted under the 504 Rural Pilot.

SBA’s waiver of the above requirements is authorized by 13 CFR 120.3 of its regulations, which provides that the SBA Administrator may suspend, modify or waive rules for a limited period of time to test new programs or ideas. The 504 Rural Pilot will be available for a two year period beginning today.

SBA will limit the number of loans made under the 504 Rural Pilot to not more than ten percent of the total number of 504 loans guaranteed by SBA in any fiscal year. While SBA does not expect the number of 504 Rural Pilot loans to reach that limit, SBA will provide public notice of the need to suspend lending under the 504 Rural Pilot for the remainder of the fiscal year if SBA determines that the number of pilot loans is approaching the limit.

SBA will be using the following criteria to evaluate the 504 Rural Pilot to determine how well it is achieving its objectives and other aspects of performance: (1) The measurable objectives to be achieved through the 504 Rural Pilot, including the number of small business concerns served, and the delinquency and default rates on the 504 Rural Pilot loans compared to regular 504 loans; (2) the number of CDCs that participate in the 504 Rural Pilot and their performance in making and servicing 504 Rural Pilot loans; and (3) the costs and standards of performance which, in order to be acceptable, must not impact the overall subsidy rate for the 504 Loan Program. For data collections to evaluate the effectiveness of this pilot, SBA will use ETran, SBA’s electronic system for loan submission and servicing.

Authority: 13 CFR 120.3.
Dated: July 6, 2018.
Linda E. McMahon,
Administrator.
[FR Doc. 2018-15312 Filed 7–18–18; 8:45 am]
BILLING CODE 8025-01-P

DEPARTMENT OF TRANSPORTATION
Federal Aviation Administration
14 CFR Part 23

Special Conditions: Cranfield Aerospace Limited, Textron Aviation Inc. Model 525-Series Airplanes; Tamarack Active Technology Load Alleviation System and Cranfield Winglets—Interaction of Systems and Structures

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Amended final special conditions; request for comments.

SUMMARY: These amended special conditions are issued for the Textron Aviation Inc. Model 525-series airplanes. These airplanes—as modified by Cranfield Aerospace Limited—will have a novel or unusual design feature associated with the installation of a Tamarack Active Technology Load Alleviation System and Cranfield Winglets. The applicable airworthiness regulations do not contain adequate or appropriate safety standards for this design feature. These amended special conditions contain the additional safety standards the Administrator considers necessary to establish a level of safety equivalent to that established by the existing airworthiness standards, change the Type Certificate holder, and remove the special flight permit requirement.

DATES: These special conditions are effective July 19, 2018 and are applicable on July 10, 2018.

We must receive your comments by September 17, 2018.

ADDRESSES: Send comments identified by docket number FAA–2016–9409 using any of the following methods:

☐ Federal eRegulations Portal: Go to http://www.regulations.gov and follow the online instructions for sending your comments electronically.

☐ Mail: Send comments to Docket Operations, M–30, U.S. Department of Transportation (DOT), 1200 New Jersey Avenue SE, Room W12–140, West Building Ground Floor, Washington, DC 20590–0001.

☐ Hand Delivery of Courier: Deliver comments to the “Mail” address between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

☐ Fax: Fax comments to Docket Operations at 202–493–2251.

Privacy: The FAA will post all comments it receives, without change, to http://regulations.gov, including any personal information the commenter provides. Using the search function of the docket website, anyone can find and read the electronic form of all comments received into any FAA docket, including the name of the individual sending the comment (or signing the comment for an association, business, labor union, etc.). DOT’s complete Privacy Act Statement can be found in the Federal Register published on April 11, 2000 (65 FR 19477–19478), as well as at http://DocketsInfo.dot.gov.

Docket: You can read the background documents or comments received at http://www.regulations.gov. Follow the online instructions for accessing the docket or go to the Docket Operations in Room @12–140 of the West Building.
Novel or Unusual Design Features

The Textron Model 525-series will incorporate the following novel or unusual design features:

- Cranfield winglets with a Tamarack Active Technology Load Alleviation System.

Discussion

For airplanes equipped with systems that affect structural performance, either directly or as a result of a failure or malfunction, the applicant must take into account the influence of these systems and their failure conditions when showing compliance with the requirements of part 23, subparts C and D. The applicant must use the following criteria for showing compliance with these special conditions for airplanes equipped with flight control systems, auto-pilots, stability augmentation systems, load alleviation systems, flutter control systems, fuel management systems, and other systems that either
directly or as a result of failure or malfunction affect structural performance. If these special conditions are for other systems, it may be necessary to adapt the criteria to the specific system.

**Discussion of Comments**

Notice of proposed Special Conditions No. 23–16–03–SC for the Cessna Model 525 airplane was published in the Federal Register on November 22, 2016 (81 FR 83737). No comments were received, and the special conditions were adopted—as proposed—in Special Condition No. 23–279–SC (82 FR 1163, January 5, 2017). Accordingly, these amended special conditions are being issued as final special conditions.

**Applicability**

As discussed above, these special conditions are applicable to the Textron Model 525-series airplanes. Should Cranfield Aerospace Limited apply at a later date for a supplemental type certificate to modify any other model included on A1WI, revision 26, to incorporate the same novel or unusual design feature, the FAA would apply these special conditions to that model as well.

**Conclusion**

This action affects only certain novel or unusual design features on one model series of airplanes. It is not a rule of general applicability and it affects only the applicant who applied to the FAA for approval of these features on the airplane.

**List of Subjects in 14 CFR Part 23**

Aircraft, Aviation safety, Signs and symbols.

**Citation**

The authority citation for these special conditions is as follows:


**The Special Conditions**

Accordingly, pursuant to the authority delegated to me by the Administrator, the following special conditions are issued as part of the type certification basis for Textron Aviation Inc. Model 525-series airplanes modified by Cranfield Aerospace Limited.

1. **Active Technology Load Alleviation System (ATLAS)**

   **SC 23.672 Load Alleviation System**

   The load alleviation system must comply with the following:

   (a) A warning, which is clearly distinguishable to the pilot under expected flight conditions without requiring the pilot’s attention, must be provided for any failure in the load alleviation system or in any other automatic system that could result in an unsafe condition if the pilot was not aware of the failure. Warning systems must not activate the control system.

   (b) The operation of the load alleviation system or of any other automatic system must permit initial counteraction of failures without requiring exceptional pilot skill or strength, by either deactivation of the system or a failed portion thereof, or by overriding the failure by movement of the flight controls in the normal sense.

   (1) If deactivation of the system is used to counteract failures, the control for this initial counteraction must be readily accessible to each pilot while operating the control wheel and thrust control levers.

   (2) If overriding the failure by movement of the flight controls is used, the override capability must be operationally demonstrated.

   (c) It must be shown that, after any single failure of the load alleviation system, the airplane must be safely controllable when the failure or malfunction occurs at any speed or altitude within the approved operating limitations that is critical for the type of failure being considered:

   (d) It must be shown that, while the system is active or after any single failure of the load alleviation system—

   (1) The controllability and maneuverability requirements of part 23, subpart D, are met within a practical portion of the flight envelope (e.g., speed, altitude, normal acceleration, and airplane configuration) that is described in the Airplane Flight Manual (AFM); and

   (2) The trim, stability, and stall characteristics are not impaired below a level needed to permit continued safe flight and landing.

   **SC 23.677 Load Alleviation Active Control Surface**

   (a) Proper precautions must be taken to prevent inadvertent or improper operation of the load alleviation system. It must be demonstrated that with the load alleviation system operating throughout its operational range, a pilot of average strength and skill level is able to continue safe flight with no objectionable increased workload.

   (b) The load alleviation system must be designed so that, when any one connecting or transmitting element in the primary flight control system fails, adequate control for safe flight and landing is available.

   (c) The load alleviation system must be irreversible unless the control surface is properly balanced and has no unsafe flutter characteristics. The system must have adequate rigidity and reliability in the portion of the system from the control surface to the attachment of the irreversible unit to the airplane structure.

   (d) It must be demonstrated the airplane is safely controllable and a pilot can perform all maneuvers and operations necessary to affect a safe landing following any load alleviation system runaway not shown to be extremely improbable, allowing for appropriate time delay after pilot recognition of the system runaway. The demonstration must be conducted at critical airplane weights and center of gravity positions.

   **SC 23.683 Operation Tests**

   (a) It must be shown by operation tests that, when the flight control system and the load alleviation systems are operated and loaded as prescribed in paragraph (c) of this section, the flight control system and load alleviation systems are free from—

   (1) Jamming;

   (2) Excessive friction; and

   (3) Excessive deflection.

   (b) The operation tests in paragraph (a) of this section must also show the load alleviation system and associated surfaces do not restrict or prevent aileron control surface movements, or cause any adverse response of the ailerons, under the loading prescribed in paragraph (c) of this section that would prevent continued safe flight and landing.

   (c) The prescribed test loads are for the entire load alleviation and flight control systems, loads corresponding to the limit air loads on the appropriate surfaces.

   **Note:** Advisory Circular (AC) 23–17C, “Systems and Equipment Guide to Certification of Part 23 Airplanes,” provides guidance on potential methods of compliance with this section and other regulations applicable to this STC project.

   **SC 23.685 Control System Details**

   (a) Each detail of the load alleviation system and related moveable surfaces must be designed and installed to prevent jamming, chafing, and interference from cargo, passengers, loose objects, or the freezing of moisture.

   (b) There must be means in the cockpit to prevent the entry of foreign objects into places where they would...
jam any one connecting or transmitting element of the load alleviation system. (c) Each element of the load alleviation system must have design features, or must be distinctively and permanently marked, to minimize the possibility of incorrect assembly that could result in malfunctioning of the control system.

SC 23.697 Load Alleviation System Controls

(a) The load alleviation control surface must be designed so that during normal operation, when the surface has been placed in any position, it will not move from that position unless the control is adjusted or is moved by the operation of a load alleviation system.

(b) The rate of movement of the control surface in response to the load alleviation system controls must give satisfactory flight and performance characteristics under steady or changing conditions of airspeed, engine power, attitude, flap configuration, speedbrake position, and during landing gear extension and retraction.

SC 23.701 Load Alleviation System Interconnection

(a) The load alleviation system and related movable surfaces as a system must—

(1) Be synchronized by a mechanical interconnection between the movable surfaces or by an approved equivalent means; or

(2) Be designed so the occurrence of any failure of the system that would result in an unsafe flight characteristic of the airplane is extremely improbable; or

(b) The airplane must be shown to have safe flight characteristics with any combination of extreme positions of individual movable surfaces.

(c) If an interconnection is used in multiengine airplanes, it must be designed to account for unsymmetrical loads resulting from flight with the engines on one side of the plane of symmetry inoperative and the remaining engines at takeoff power. For single-engine airplanes, and multiengine airplanes with no slipstream effects on the load alleviation system, it may be assumed that 100 percent of the critical air load acts on one side and 70 percent on the other.


The load alleviation system must comply with §§ 23.675, 23.681, and 23.693 as written and no unique special condition will be required for these regulations.

Applicability of Control System Regulations to Other Control Systems

If applicable, other control systems used on the Textron Model 525-series may require a showing of compliance with §§ 23.672, 23.675, 23.677, 23.681, 23.683, 23.685, 23.693, 23.697, and 23.701 as written for this STC project.

2. Interaction of Systems and Structures

(a) The criteria defined herein only address the direct structural consequences of the system responses and performances and cannot be considered in isolation but should be included in the overall safety evaluation of the airplane. These criteria may in some instances duplicate standards already established for this evaluation. These criteria are only applicable to structure whose failure could prevent continued safe flight and landing.

(b) Depending upon the specific characteristics of the airplane, additional studies may be required that go beyond the criteria provided in this special condition in order to demonstrate the capability of the airplane to meet other realistic conditions such as alternative gust or maneuver descriptions for an airplane equipped with a load alleviation system.

(c) The following definitions are applicable to this special condition.

(1) Structural performance: Capability of the airplane to meet the structural requirements of 14 CFR part 23.

(2) Flight limitations: Limitations that can be applied to the airplane flight conditions following an in-flight occurrence and that are included in the flight manual (e.g., speed limitations, avoidance of severe weather conditions, etc.).

(3) Reserved.

(4) Probabilistic terms: The probabilistic terms (probable, improbable, extremely improbable) used in this special condition are the same as those used in § 23.1309. For the purposes of this special condition, extremely improbable for normal, utility, and acrobatic category airplanes is defined as 10⁻⁸ per hour. For commuter category airplanes, extremely improbable is defined as 10⁻⁹ per hour.

(5) Failure condition: The term failure condition is the same as that used in § 23.1309; however this special condition applies only to system failure conditions that affect the structural performance of the airplane (e.g., system failure conditions that induce loads, change the response of the airplane to inputs such as gusts or pilot actions, or lower flutter margins).

(d) General. The following criteria (paragraphs (e) through (j)) will be used in determining the influence of a system and its failure conditions on the airplane structure.

(e) System fully operative. With the system fully operative, the following apply:

(1) Limit loads must be derived in all normal operating configurations of the system from all the limit conditions specified in subpart C (or defined by special condition or equivalent level of safety in lieu of those specified in subpart C), taking into account any special behavior of such a system or associated functions or any effect on the structural performance of the airplane that may occur up to the limit loads. In particular, any significant nonlinearity (rate of displacement of control surface, thresholds or any other system nonlinearities) must be accounted for in a realistic or conservative way when deriving limit loads from limit conditions.

(2) The airplane must meet the strength requirements of part 23 (static strength and residual strength for failsafe or damage tolerant structure), using the specified factors to derive ultimate loads from the limit loads defined above. The effect of nonlinearities must be investigated beyond limit conditions to ensure the behavior of the system presents no anomaly compared to the behavior below limit conditions. However, conditions beyond limit conditions need not be considered when it can be shown that the airplane has design features that will not allow it to exceed those limit conditions.

(3) The airplane must meet the aeroelastic stability requirements of § 23.629.

(f) System in the failure condition. For any system failure condition not shown to be extremely improbable, the following apply:

(1) At the time of occurrence. Starting from 1-g level flight conditions, a realistic scenario, including pilot corrective actions, must be established to determine the loads occurring at the time of failure and immediately after failure.

(i) For static strength substantiation, these loads, multiplied by an appropriate factor of safety that is related to the probability of occurrence of the failure, are ultimate loads to be considered for design. The factor of safety is defined in figure 1.
(ii) For residual strength substantiation, the airplane must be able to withstand two thirds of the ultimate loads defined in subparagraph (f)(1)(i).

(iii) For pressurized cabins, these loads must be combined with the normal operating differential pressure.

(iv) Freedom from aeroelastic instability must be shown up to the speeds defined in § 23.629(f). For failure conditions that result in speeds beyond $V_D/M_D$, freedom from aeroelastic instability must be shown to increased speeds, so that the margins intended by § 23.629(f) are maintained.

(v) Failures of the system that result in forced structural vibrations (oscillatory failures) must not produce loads that could result in detrimental deformation of primary structure.

(2) For the continuation of the flight. For the airplane, in the system failed state and considering any appropriate reconfiguration and flight limitations, the following apply:

(i) The loads derived from the following conditions (or defined by special condition or equivalent level of safety in lieu of the following conditions) at speeds up to $V_C/M_C$, or the speed limitation prescribed for the remainder of the flight, must be determined:
(D) The limit yaw maneuvering conditions specified in §§ 23.351, 23.441, and 23.445.
(E) The limit ground loading conditions specified in §§ 23.473 and 23.493.

(ii) For static strength substantiation, each part of the structure must be able to withstand the loads in paragraph (f)(2)(i) of this special condition multiplied by a factor of safety depending on the probability of being in this failure state. The factor of safety is defined in figure 2.
(iii) For residual strength substantiation, the airplane must be able to withstand two thirds of the ultimate loads defined in paragraph (f)(2)(ii) of this special condition. For pressurized cabins, these loads must be combined with the normal operating pressure differential.

(iv) If the loads induced by the failure condition have a significant effect on fatigue or damage tolerance, then their effects must be taken into account.

(v) Freedom from aeroelastic instability must be shown up to a speed determined from figure 3. Flutter clearance speeds $V'$ and $V''$ may be based on the speed limitation specified for the remainder of the flight using the margins defined by §23.629.

\[ Q_j = (T_j)(P_j) \]

$Q_j$ = Probability of Being in Failure Condition $j$

$10^X = 10^8$ for Normal, Utility, and Acrobatic Category Airplanes

$= 10^9$ for Commuter Category Airplanes

$10^X = 10^8$ for Normal, Utility, and Acrobatic Category Airplanes

$= 10^9$ for Commuter Category Airplanes

$Q_j = (T_j)(P_j)$ where:

$T_j$ = Average time spent in failure condition $j$, hours

$P_j$ = Probability of occurrence of failure mode $j$, per hour

Note: If $P_j$ is greater than $10^{-3}$ per flight hour, then a 1.5 factor of safety must be applied to all limit load conditions specified in part 23 subpart C.
(vi) Freedom from aeroelastic instability must also be shown up to $V'$ in figure 3 above, for any probable system failure condition combined with any damage required or selected for investigation by §§ 23.571 through 23.574.

(3) Consideration of certain failure conditions may be required by other sections of 14 CFR part 23 regardless of calculated system reliability. Where analysis shows the probability of these failure conditions to be less than $10^{-8}$ for normal, utility, or acrobatic category airplanes or less than $10^{-9}$ for commuter category airplanes, criteria other than those specified in this paragraph may be used for structural substantiation to show continued safe flight and landing.

(g) Failure indications. For system failure detection and indication, the following apply:

1. The system must be checked for failure conditions, not extremely improbable, that degrade the structural capability below the level required by part 23 or significantly reduce the reliability of the remaining system. As far as reasonably practicable, the flightcrew must be made aware of these failures before flight. Certain elements of the control system, such as mechanical and hydraulic components, may use special periodic inspections, and electronic components may use daily checks, in lieu of detection and indication systems to achieve the objective of this requirement. These certification maintenance requirements must be limited to components that are not readily detectable by normal detection and indication systems and where service history shows that inspections will provide an adequate level of safety.

2. The existence of any failure condition, not extremely improbable, during flight that could significantly affect the structural capability of the airplane and for which the associated reduction in airworthiness can be minimized by suitable flight limitations, must be signaled to the flightcrew. The probability of not annunciating these failure conditions must be extremely improbable (unannunciated failure). For example, failure conditions that result in a factor of safety between the airplane strength and the loads of subpart C below 1.25, or flutter margins below $V''$, must be signaled to the flightcrew during flight.

(h) Fatigue and damage tolerance. If any system failure would have a significant effect on the fatigue or damage evaluations required in §§ 23.571 through 23.574, then these effects must be taken into account.

Issued in Kansas City, Missouri, on July 10, 2018.

Pat Mullen,
Manager, Small Airplane Standard Branch, Aircraft Certification Service.

[FR Doc. 2018–15354 Filed 7–18–18; 8:45 am]