

KING AIR C90A VS CONQUEST I

The following demonstrates many of the major advantages of the King Air C90A versus the Conquest 425.

SYSTEMS AND COMPONENTS

Autofeather & Rudder Boost

King Air C90A

The C90A comes standard equipped with both autofeather and rudder boost. Typically used on every flight, neither system is required for flight and therefore are not considered as no-go items.

Conquest I

For the Conquest I, autofeather is mandatory for flight and rudder boost is not available.

Auto Ignition

King Air C90A

The King Air C90A comes equipped with auto ignition. When armed, the system will prevent engine flame out at low power settings or due to water ingestion.

Conquest I

Auto Ignition not available.

Fuel Additives

King Air C90A

The C90A does not require the use of any anti-ice fuel additives (i.e. PRIST) for normal operations. Automatically heated fuel lines prevent the need for often expensive or unavailable additives.

Conquest I

The Conquest requires anti-icing additives for all operations. This is required to prevent fuel from freezing at altitude to prevent engine fuel starvation.

Anti-Ice Windshields

King Air C90A

The C90A uses electric windshield heat for both the pilot and copilot windshields. They are thermostatically controlled and cycle to maintain de-icing capabilities throughout all phases of flight to maximum forward visibility in icing conditions. An additional benefit of a fully heated windshield is the ability to better withstand a bird strike due to the impact resistance of heated glass versus cold.

Conquest I

The Conquest uses electric heat on the pilot's side only. An optional alcohol anti-ice system was available and provides anti-icing capability for both pilot and copilot windshields, however, the system has several limitations:

- a. If installed on both the pilot and copilot sides, only one (1) hour of continuous operation can be provided
- b. For operations in continuous enroute icing conditions, 1/8 to 1/4 inch of ice is recommended to accumulate prior to operating the system
- c. For best results, airspeed should be 140 KIAS or below.
- d. During an instrument approach in icing conditions, the windshield de-ice switch breaker must be positioned off 20 seconds prior to reaching minimum descent altitude. The alcohol film must be allowed to evaporate before a clear field of vision through the windshield is available.

Exterior Lighting

King Air C90A

The C90A is equipped with three (3) point strobe lighting as standard adding to operational safety in both day or night conditions.

Conquest I

Two point strobe system only.

Weight and Capacities

King Air C90A

Testimony to the King Air C90A's durable construction is the fact that the C90A has no zero fuel weight limitation. This yields greater payload carrying capability by 1,400 to 1,800 pounds more when compared to the Conquest.

Conquest I

The zero fuel weight limitation of the Conquest limits the amount of payload the aircraft can carry. The Conquest's legal payload limit is dependent upon which serial number (i.e. Gross Weight increased from 8,200 lbs to 8,600 lbs).

Maximum Fuel Imbalance Limitation

King Air C90A

The King Air C90A has no fuel imbalance limitation which gives the pilot greater flexibility during normal or emergency operations.

Conquest I

The maximum fuel imbalance limitation in the Conquest is 200 lbs. This could seriously limit the pilot during single engine operations and may adversely effect the handling characteristics of the aircraft.

Cabin & Passenger Comfort

King Air C90A

The more spacious cabin of the C90A provides passengers with greater comfort and more usable space. When compared to the Conquest, the King Air C90A has the following advantages:

1. Certified for up to thirteen (13) occupants versus a maximum of eight (8) in the Conquest I.
2. Typical corporate configuration is one (1) to two (2) passengers more in the C90A.
3. The lavatory seat in the C90A is a full size passenger seat and is certified for takeoffs and landings. The Conquest toilet is smaller and not certified for takeoffs and landings. (Dependent upon Serial Number)
4. The passenger entrance door on the C90A is 10% larger allowing for easier passenger entrance and egress as well as baggage loading.

Cabin & Passenger Comfort
(Continued)

5. The King Air C90A's entrance door area will not be obstructed by a passenger seat where in the Conquest, the seat must be moved out of the way for loading and unloading.
6. All baggage is internal, pressurized, and heated in the King Air C90A. The Conquest only has baggage space in the nose compartment which is non-pressurized and not heated. Internal baggage is limited, in fact, the Conquest does not provide a place to hang your coat.

Power Plant & Climb Performance

King Air C90A

The C90A is equipped with two Pratt & Whitney 550 SHP engines vs 450 SHP in the Conquest. More engine power yields better climb performance thus contributing to the safety of operations.

<u>Climb</u>	<u>King Air C90A</u>	<u>Conquest</u>
Two Engine Climb	2,003 FPM	1,861 FPM
Single Engine Climb	554 FPM	357 FPM

Electrical System

King Air C90A

The C90A comes standard equipped with a new state-of-the-art three bus electrical system which provides redundancy, reliability, and safety. Should a component of the electrical system malfunction, the C90A's triple fed system automatically provides ground fault detection which will shed the load, isolate the problem, and provides alternative electrical routes to access unaffected systems. The system, minimizes pilot workload and offers additional levels of safety should a ground fault occur.

Conquest I

Older two bus system design.

Fuel System

King Air C90A

The C90A bladder type fuel system simplifies pilot operations through automatic fuel transfer and automatic crossfeed.

Conquest I

The Conquest wet wing fuel system requires more pilot attention due to fuel imbalance limitations (200 lbs.), manual crossfeed, and the wet wing design may leak through time which will require expensive repairs.

Production & Support

King Air C90A

The King Air C90 series is a current production aircraft. Over 1,300 units have been produced over the past 30 years and product refinement is continuing at Beech. An example of Beech's dedication to continued production, product support, and product refinement is evident in the introduction of the new model King Air C90B which was announced in October of 1991. The C90B incorporates all of the features of the C90A with the addition of a redesigned interior, some system modifications, and major advances in sound level reduction through new engineering techniques.

"Current production" to the Beechcraft operator means parts availability, worldwide service support, on-going factory backing, highly trained experienced technicians, and a proven design which has survived the tests of time and other market forces. In fact, the King Air 90 Series has out sold the Conquest 425 series nearly 6 to 1. No other aircraft manufacturer in the world can match the dedication and resolve of Beechcraft toward product improvements and support.

Conquest I

The Conquest ceased its fabrication and production run in 1983/84. In the following years, those parts and subassemblies which were on the shelf were used to complete a slowed down production of the last few units through 1986. The total production run of the Conquest 425 series was only 236 units of which only 10 units were produced in 1986.

The reality of an out-of-production aircraft is that the manufacturer (Cessna) is only required to support the product up to seven years after the final production run. Through time part availability, field service, vendors may no longer make specific parts, skilled factory workers are displaced, and factory support is limited and uneconomical. Overall, factory support diminishes and is currently minimal at best.

Crew Training

King Air C90A

Factory sponsored pilot and mechanic training is available through Flight Safety International in Wichita Kansas for the King Air 90 series. Full visual, static, and motion simulators are on-line thus contributing to the overall education of your pilot. Without exception or reservation, Beech believes that the most important safety feature of any aircraft is a highly trained pilot/mechanic, and therefor, Beech continues to provide extensive factory technical assistance to Flight Safety in all aspects of training.

Unmatched Safety Record

From the National Transportation & Safety Board (NTSB) data on aircraft Accidents/Incidents statistic compiled between 1962 through 1989, the King Air 90 series is one of the safest aircraft to fly.

In fact, the 90 series aircraft ranked far better than all other turboprops in its class and is unmatched except by other Beechcraft King Air models.

**CESSNA AIRCRAFT CORP.
AIRWORTHINESS DIRECTIVE
SMALL AIRCRAFT**

91-25-08 **CESSNA:** Amendment 39-8109. Docket No. 91-CE-83-AD.
Applicability: Model 421C airplanes (serial numbers (S/N) 421C0801 through 421C1807) and Model 425 airplanes (S/N 425-0002 through 425-0236), certificated in any category.

Compliance: Required as indicated, unless already accomplished.

NOTE: The compliance time in this AD takes precedence over that cited in the referenced service information.

To prevent wing failure caused by cracks in a wing front spar upper cap, which could result in loss of control of the airplane, accomplish the following:

(a) Upon the accumulation of 3,000 hours time-in-service (TIS) or within the next 25 hours TIS after the effective date of this AD, whichever occurs later, fluorescent penetrant inspect both wing front spar upper caps for cracks between the main landing gear actuating cylinder attachment and the front spar wing attach fittings in accordance with the instructions in Cessna Service Bulletin (SB) MEB91-7 or Cessna SB CQB91-8, both dated October 18, 1991, whichever is applicable.

(1) If any crack is found that is 2.5 inches or greater in length that is parallel to the top of the spar cap or any crack that is perpendicular to the top of the spar cap, prior to further flight, obtain a repair scheme from the manufacturer through the Wichita Aircraft Certification Office at the address specified in paragraph (b) of this AD, and reinspect thereafter at intervals not to exceed 300 hours TIS.

(2) If any crack is found that is less than 2.5 inches in length and is parallel to the top of the spar cap, return the airplane to service and reinspect thereafter at intervals not to exceed 25 hours TIS.

(3) If no cracks are found, return the airplane to service and reinspect thereafter at intervals not to exceed 300 hours TIS.

(b) Send the results of each inspection in writing to the Manager, Wichita Aircraft Certification Office, FAA, 1801 Airport Road, Room 100, Wichita, Kansas 67209, within 10 days after each inspection. State whether cracks were found, the location and length of any cracks, and the total hours TIS of the component at the time the crack was discovered. Reports may be submitted by filling out the form provided in the applicable service bulletin. (Reporting approved by the Office of Management and Budget under OMB No. 2120-0056).

(c) Special flight permits may be issued in accordance with FAR 21.197 and 21.199 to operate the airplane to a location where the requirements of this AD can be accomplished.

(d) An alternative method of compliance or adjustment of the initial or repetitive compliance times that provides an equivalent level of safety may be approved by the Manager, Wichita Aircraft Certification Office at the address specified in paragraph (b) of this AD. The request should be forwarded through an appropriate FAA Maintenance Inspector, who may add comments and then send it to the Manager, Wichita Aircraft Certification Office.

2 91-25-08

(e) The inspections required by this AD shall be done in accordance with Cessna Service Bulletin MEB91-7 or Cessna Service Bulletin CQB91-8, both dated October 18, 1991, whichever is applicable. This incorporation by reference was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR Part 51. Copies may be obtained from the Cessna Aircraft Company, Customer Service Department 753, P.O. Box 7704, Wichita, Kansas 67277. Copies may be inspected at the FAA, Central Region, Office of the Assistant Chief Counsel, Room 1558, 601 E. 12th Street, Kansas City, Missouri, or at the Office of the Federal Register, 1100 L Street, NW, Room 8401, Washington, DC.

This amendment (39-8109, AD 91-25-08) becomes effective on December 23, 1991.

FOR FURTHER INFORMATION CONTACT:

Mr. Larry Abbott, Aerospace Engineer, Wichita Aircraft Certification Office, 1801 Airport Road, Room 100, Mid-Continent Airport, Wichita, Kansas 67209; Telephone (316) 946-4123; Facsimile (316) 426-4407.