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**Civil Aviation Administration of China (CAAC)**

**Aircraft Evaluation Group (AEG)**

# **Aircraft Evaluation Report**

**For**

**Cessna Model 510 (CE-510)**

**Revision 0**

**Date: 23/12/2013**

**Manufacturer: Cessna Aircraft Company**

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## Revision Record & Approval

Revision No.	Section	Highlight	Date
Rev. 0	All	Initial issue (Conversion format of CAAC AEG evaluation determination)	December 23, 2013

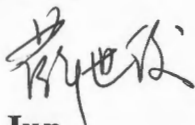
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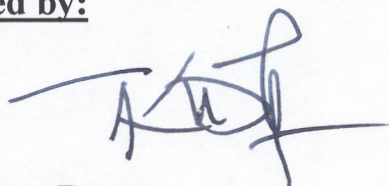


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## **Foreword**

The Cessna Model 510 aircraft was initially type certificated by Federal Aviation Administration (FAA) on August 21, 2007, and the validated Type Certificate was issued by CAAC airworthiness department on March of 2009.

The Cessna Model 510 aircraft was evaluated by CAAC AEG in January 2010.

This report was first composed in December 2013 to cover all the previous AEG evaluation determinations for Cessna Model 510 which were issued in January 25, 2010, and since this report is formally issued, the individual CAAC AEG validation and approval letters for Cessna model 510 (AEG-CE510-2010001 to 2010004) are cancelled.

## Section 1: Pilot Type Rating and Qualification Specification

### 1.1 Statement and Explanation

This section is the formal notification that the CAAC has conducted Flight Standardization Board (FSB) evaluation for Cessna Model 510 (CE-510) based on the Flight Standardization Board Report (FSBR) for Cessna 510 (CE510) issued by FAA on April 09, 2007, which specifies the pilot type rating, training, checking, and currency specifications for the flight crews.

Hereby, the provisions in this section can be used, as the basis, by Chinese operators to develop their pilot qualification and training program for above aircraft.

Alternate means of compliance to the requirements of CCAR 61, 135, other than as specified in the provisions of this section, must be approved by Flight Standards Department of CAAC. If alternate compliance is sought, operators will be required to establish that proposed alternate means provide an equivalent level of safety to the provisions of this section, and analysis, demonstrations, proof of concept testing, differences documentation, or other evidence may be required.

Find FAA Report here:

<http://fsims.faa.gov/PICResults.aspx?mode=Publication&doctype=FSB%20Reports>

## **1.2 Pilot Type Rating and Licence Endorsement**

Upon the FSB evaluation, the Pilot Type Rating for CE-510 is listed as follows:

<b>Manufacturer</b>	<b>Aircraft Type</b>	<b>Pilot Type Rating</b>
Cessna Aircraft Company	Cessna Model 510 (CE-510)	CE-510 (Dual pilot)
		CE-510S (Single pilot)

### **License endorsement:**

“CE-510” for getting a type rating from Cessna CE-510 as a Pilot In Command for dual pilot flying, “CE-510S” for getting a type rating from Cessna CE-510 for single pilot flying, and checking records should also be shown.

## **1.3 ODR and MDR**

Not applicable.

## **1.4 Specification for Training**

The training courses proposed by Wichita Cessna Learning Center of Flight Safety International for CE-510 are as following, it is considered as manufacturer recommended pilot training program and have to be considered as minimum:

- Citation Mustang (CE-510) Initial Syllabus
- Citation Mustang (CE-510) Recurrent Syllabus

*Note 1: The proposed type rating course is suitable for pilots with previous experience as following:*

- (1) For single pilot operation, have at least 200 hours total flying experience, and at least 70 hours as pilot-in-command.*
- (2) For dual pilot operation, have at least 70 hours as pilot-in-command of airplanes, valid multi-engine instrument rating and satisfactory completion of multi-crew cooperation course.*

*Note 2: Above mentioned training courses are available by request to Cessna.*

Specifications for particular emphasis elements during training for pilot flying CE-510 as following:

- Use of the Garmin 1000 avionics operation
- Use of the EFIS/FMS system.
- Interpretation and use of the Crew Alerting System (CAS) combined with Pilots' Abbreviated Checklist

### **1.5 Specification for Checking**

As required by CCAR Part 61 and 135.

For pilot apply for CE-510S type rating who already holds a CE-510 type rating must successfully complete a separate entire practical examination in accordance with the appropriate Practical Test Standard as a single pilot, and get CE-510S pilot type rating in this manner should be issued the CE-510S pilot type rating and retain the CE-510 type rating designation on their pilot certificate.

### **1.6 Specification for Currency**

As required by CCAR Part 61 and 135.

Takeoffs and landings, either performed as a single pilot or as a crew of two satisfy the currency required for either and both pilot type ratings, CE-510 and CE-510S.

### **1.7 Specification for Flight Simulation Training Devices**

All training devices should be qualified as per CCAR-60.

## **Section 2: Master Minimum Equipment List**

### **2.1 Statement and Explanation**

This section is the formal notification that CAAC AEG has conducted Flight Operation Evaluation Board (FOEB) evaluation for CE-510 aircraft based on the Master Minimum Equipment List (MMEL) for Cessna Model 510 (CE-510) issued by FAA on September 08, 2007 (Rev. 0a), which outlines the items of equipment that may be inoperative and yet maintain an acceptable level of safety by appropriate conditions and limitations.

Hereby, the MMEL and its future revisions issued by FAA can be used, as the basis, by Chinese operators to develop their Minimum Equipment List (MEL) for above aircraft.

It is the responsibility of Chinese operators and the Principle Inspectors (PI) to check and verify the exact CCAR requirements for any of the contents marked or referenced with FAA regulatory document or its articles.

**Find the FAA MMEL here:**

<http://fsims.faa.gov/PICResults.aspx?mode=Publication&doctype=MMEL>

### **2.2 CAAC Supplemental**

Not applicable.

## **Section 3: Schedule Maintenance Requirements**

### **3.1 Statement and Explanation:**

There is no Maintenance Review Board Report for Cessna 510 airplane.

Airworthiness Limitation approved by type certification process included in the following documents:

- Model 510 Maintenance Manual, Chapter 4

Maintenance tasks of above mentioned Airworthiness Limitation will not be allowed to be escalated without approval of type certification authority.

Schedule maintenance requirements recommended by Cessna included in the following documents:

- Model 510 Maintenance Manual, Chapter 5

Maintenance tasks of above mentioned schedule maintenance requirements may be escalated with the supporting data by operator's reliability program.

### **3.2 CAAC Supplemental**

Not applicable.

## **Section 4: Operational and Continued Airworthiness Instructions**

### **4.1 Statement and Explanation:**

This section is the formal notification that the CAAC AEG has conducted evaluation of the operational and continued airworthiness instructions for Cessna Model 510 (CE-510) Aircraft based on the relevant policies and procedures of Cessna.

Hereby, the Operational & Continued Airworthiness Instructions listed in the attachment were found acceptable by CAAC AEG, and will give the necessary guidance for properly operating and maintaining Cessna CE-510 Aircraft within the approved operating conditions and limitations.

This acceptance may not assure the accuracy and applicability of the content in each document, it is the aircraft owner's or operator's responsibility to report any defect or discrepancy in the documents to the aircraft manufacturer, or report to CAAC AEG through website: <http://aeg.caac.gov.cn/>.

### **Operational & Continued Airworthiness Instructions distribution:**

By Cessna either in hardcopy, CD/DVD or website, except engine manuals are distributed by engine manufacturer directly to operators.

## **4.2 List of Operational and Continued Airworthiness Instructions**

<b>Manual</b>	<b>Reference No.</b>	<b>Description</b>	<b>Revision/Date</b>
MM	510MMXX	Model 510 Maintenance Manual	Rev.7 and as revised
SRM	510SRXX	Model 510 Structural Repair Manual	Rev.1 and as revised
NDT	510NDXX	Model 510 Nondestructive Testing Manual	Rev.2 and as revised
ITEM	510TEXX	Model 510 Illustrated Tool & Equipment Manual	Original Issue and as revised
CMM	510CMXX	Model 510 Component Maintenance Manual	Original Issue and as revised
IPC	510PCXX	Model 510 Illustrated Parts Catalog	Rev.6 and as revised
WDM	510WDXX	Model 510 Wiring Diagram Manual	Rev.20 and as revised
OM	510OMXX	Model 510 Operating Manual	Original issue. Feb 2007 and as revised
CLEAP	51CLEAP-XX	Pilots abbreviated Checklist Model 510, Abnormal/Emergency Procedures for 510-0001 and on	Rev.7 and as revised
CLNP	51CLNP-XX	Pilots abbreviated Checklist Model 510, Normal Procedures for 510-0001 and on	Rev.7 and as revised
WB	51WB-XX	Model 510 Weight & Balance Manual	Rev.2 and as revised
MELCL	510MELCLXX	MMEL Operational and Maintenance Procedures Guide	Rev. 0a, and as revised

*Note 1: The above technical publication will be not customized by Cessna, the operator should carefully check the applicability before reference to some contents of the manual.*

*Note 2: For optional equipment installation developed by Cessna, the operation document as defined in Flight Manual Supplemental, and maintenance instructions included in the general technical publications as above.*

*Note 3: Cessna issue Service Document only for instructions of modification and separate ICA provide related maintenance instructions. ICA also provides temporary manual amendment no related to modifications.*

*Note 4: Amendment to Flight Manual, Structural Repair Manual and chapter 4 of Maintenance Manual should be approved by FAA.*

## **Section 5: CCARs Compliance Checklist**

### **5.1 Statement and Explanation:**

This section is the formal notification that CAAC AEG has developed the compliance checklist for Cessna Model 510 (CE-510) Aircraft for operating under CCAR-91R2 and CCAR-135, which is based on the following aircraft configuration:

- FAA Type Certificate Data Sheet NO. A00014WI, Revision2.

This checklist is provided as an aid to identify those specific requirements of rules for which compliance has already been demonstrated for the type design. The checklist also notes the requirements of rules which remain to be demonstrated compliance PI by operators.

When the aircraft configuration differs from the above stated aircraft configuration, it is the responsibility of the Operator and its CAAC PI to evaluate those differences and develop the compliance to the relevant requirements of rules.

It also remains the responsibility of the Operator and its CAAC PI to evaluate the corrective actions for those items not satisfactorily addressing compliance in the checklist prior to approve the appropriate operation.

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**5.2 CCAR-91R2 Compliance Checklist**

Articles/Subject	Compliance	Remark/Limitation
§91.401 Civil aircraft: Certifications required	Complies with Fuel venting and exhaust emissions requirements	Other requirements should be checked by PI.
§91.403 Instrument and Equipment for VFR operation	Complies	
§91.405 Instrument and Equipment for IFR operation	Complies	
§91.407 Instruments and Equipments for night and over-the-top operation	Complies except Flashlight required by 91.407 a (5) is not standard equipment.	Requirements in operation should be checked by PI.
§91.409 Mach number indicator	Complies	
§91.411 Radio communication equipment	Complies	Requirements in operation should be checked by PI.
§91.413 Navigation equipment	Complies	Requirements in operation should be checked by PI.
§91.415 Emergency and life-saving equipment	Complies except First aid kits required by 91.415 (a) is not a standard equipment and requirements as 91.415 (d) ~ (h) are not applicable.	No break-in points for the type design.
§91.417 Additional emergency and Life equipments for over water operation	Does not comply	Should be checked by PI in accordance with actual operating condition.
§91.419 Additional emergency and Life-saving equipment for rotorcraft over water flights	Not applicable	
§91.421 Additional emergency and Life-saving equipment for flights over designated land areas	Does not comply	Should be checked by PI in accordance with actual operating condition.
§91.423 Oxygen equipment-operation at high altitude	Complies	Oxygen availability and duration computation per AFM should be checked by PI.
§91.425 Equipment for operation in icing	Complies	

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Articles/Subject	Compliance	Remark/Limitation
conditions		
§91.427 ATC transponder and altitude reporting equipment	Complies	Requirements in operation should be checked by PI.
§91.429 Altitude alerting system or device: Turbojet-powered civil airplanes.	Complies	Requirements in operation should be checked by PI.
§91.431 Weather radar	Complies	Requirements in operation should be checked by PI.
§91.433 Flight recorder	Not applicable	Maximum certified takeoff weight is less than 5700kg.
§91.435 Emergency locator transmitter	Complies with one ELT	Requirements in operation should be checked by PI.
§91.437 Terrain awareness and warning system.	Not applicable	Maximum certified takeoff weight is less than 5700kg.
§91.439 Traffic Alert and Collision Avoidance equipment and use	Not applicable	Maximum certified takeoff weight is less than 5700kg.
§91.441 Radiation indicator	Not applicable	The AFM limited maximum altitude 41000ft.
Appendix B Category II Operations: Manual, Instruments, Equipment, and Maintenance	Not applicable	It is not approved for category II operations.
Appendix C Operations within airspace designated as Minimum Navigation Performance Specification Airspace.	Complies	Requirements in operation should be checked by PI.
Appendix D Operations in Reduced Vertical Separation Minimum(RVSM)	Does not comply with the requirement for TCAS II 7.0 or new version.	1. It is the responsibility of PI for acceptance of the deviation or exemption. 2. Requirements in operation should be checked by PI.

### 5.3 CCAR-121R4 Compliance Checklist

Not Applicable.

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### 5.4 CCAR-135 Compliance Checklist

Articles/Subject	Compliance	Remark/Limitation
§135.75 Inspectors credentials: admission to pilots' compartment	No forward observer seat in cockpit.	The suitability of the location of the passenger seat and the headset or speaker for use in conducting en route inspections is determined by the PI.
§135.146 Emergency locator transmitters	Complies	
§135.149 Dual controls required.	Complies	
§135.151 Equipment requirements: General.	Complies	
§135.153 Public address and crewmember interphone systems.	Not applicable	Maximum approved passenger seating configuration of 4.
§135.155 Flight Data Recorder	Not applicable	Maximum certified takeoff weight is less than 5700kg.
§135.157 Cockpit voice recorders.	Not applicable	Maximum certified takeoff weight is less than 5700kg.
§135.159 Ground proximity warning system	Not applicable	Maximum certified takeoff weight is less than 5700kg.
§135.161 Terrain awareness and warning system (TAWS)	Not applicable	Maximum certified takeoff weight is less than 5700kg.
§135.163 Fire extinguishers: Passenger carrying aircraft.	Complies	
§135.165 Oxygen equipment requirements.	Complies	Oxygen availability and duration computation per AFM should be checked by PI.
§135.167 Equipment requirements: Carrying passengers under VFR at night or under VFR over the top conditions	Complies except Flashlight required by 135.167 (f) (3) is not standard equipment.	
§135.169 Radio and navigational equipment:	Complies	

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Articles/Subject	Compliance	Remark/Limitation
Carrying passengers under VFR at night or under VFR over the top.		
§135.171 Equipment requirements: Aircraft carrying passengers under IFR	Complies	
§135.173 Radio and navigational equipment requirement for extended overwater or IFR operations.	Complies	
§135.175 Emergency equipment requirements for extended overwater operations.	Does not comply	Should be checked by PI in accordance with actual operating condition.
§135.177 Shoulder harness installation requirement at flight crewmember stations.	Complies	
§135.179 Airborne thunderstorm detection equipment requirements.	Not applicable	Maximum approved passenger seating configuration of 4.
§135.181 Airborne weather radar equipment requirements.	Not applicable	Not transport category airplane
§135.183 Emergency equipment requirements for aircraft having a passenger seating configuration of more than 19 passengers.	Not applicable	Maximum approved passenger seating configuration of 4.
§135.185 Additional emergency equipments	Not applicable	Maximum approved passenger seating configuration of 4.
§135.189 Airborne Collision Avoidance System (ACAS II )	Not applicable	Maximum certified takeoff weight is less than 5700kg.
§135.191 Performance requirements: Aircraft operated over the top or in IFR conditions	Complies	Requirements in operation should be checked by PI.
§135.193 Land aircraft operated over water	Complies	Requirements in operation should be checked by PI.

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<b>Articles/Subject</b>	<b>Compliance</b>	<b>Remark/Limitation</b>
<b>§135.197</b> Language requirement for placards and markings	Complies	Require further check by PI before operation
<b>§135.199</b> Pitot heat indication systems.	Not applicable	Not transport category airplane
<b>§135.203</b> Materials for compartment interiors	Not applicable	Not transport category airplane

## **Section 6: Other Evaluation Items**

Not Applicable

## Appendix A: CAAC AEG Team and Point of Contact

### A.1: CAAC AEG Team

<u>Mr. Zhang Ling Zhi</u>	Deputy Chief, Aircraft Evaluation Division, Flight Standards Department
<u>Mr. Wang Jin</u>	Engineer, AEG Office of Civil Aviation Safety and Technology Center
<u>Mr. Tan Yun Feng</u>	Director, AEG Office of Shenyang Aircraft Airworthiness Certification Center
<u>Mr. Tong Yu</u>	Operation Inspector, Heilongjiang Safety Surveillance Bureau

### A.2: Cessna Point of Contact

Mr. Travis Tyler	Airworthiness Engineer
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