AIRWORTHINESS BULLETIN

Aircraft Security Devices – Installation

AWB 02-008 **Issue** : 2
Date : 10 October 2013

1. Applicability

To aircraft owners, operators, design persons and maintainers intending to incorporate enhanced security features in aircraft.

Issue 2 of this AWB updates departmental and regulatory references only; there are no technical changes to the content.

2. Purpose

Large aircraft are now required to have cockpit doors with enhanced security requirements, but a survey of a range of small aircraft revealed that most aircraft did not incorporate a high level of physical security. The Australian Government has decided to issue legislation so that from 10 March 2005 aircraft must be secured against theft. The Office of Transport Security (OTS) in the Department Infrastructure and Regional Development will define which aircraft are to be covered by this requirement and the standards to be applied.

OTS has issued preliminary advice that standard door locks on aircraft are not adequate to secure aircraft, and has suggested some enhanced anti-theft measures. A range of aviation security devices are being marketed internationally to satisfy similar requirements in several countries.

OTS also noted that the measure used would need to be easily visible from outside the aircraft to deter theft and to facilitate OTS compliance checking.

OTS is responsible for aviation security requirements, but any aircraft modifications or installation of devices must accord with CASA safety regulations. However, some items used with an aircraft do not justify or require specific approval, for example, a removable sunscreen for the windscreen or wheel chocks.

The schedule for completion of this task is short, and there are many aircraft involved. Expedited procedures may be required to ensure that the time restraints are satisfied.

This AWB provides information on how these enhanced security measures can be approved, if necessary.

3. Background

Regulatory Requirements

Under Regulation 42U of the Civil Aviation Regulations 1988 (CAR), any modification to an aircraft must be made to approved maintenance data. An aircraft component is defined in Regulation 2 of CAR 2 1988 as any part or equipment for an aircraft that, when fitted to, or provided in an aircraft may, if it

is not sound or functioning correctly, affect the safety of the aircraft, its occupants or its cargo or cause the aircraft to become a danger to person or property.

The determination of whether an item was an aircraft component would normally be made by an authorised person or by a direction under Subregulation 2(2) of CAR 1988. However, in this specific case, CASA has developed criteria to enable the Registered Operator (previously the Certificate of Registration holder) for the aircraft to review potential security enhancement devices, and to ascertain if approval is required for the design, manufacture, installation or operation of the devices.

Aircraft Component

If the installation requires any modification to the aircraft, such as drilling of holes to install a padlock, the modification must be approved.

If the security device could affect the safety of the aircraft, its occupants, or its cargo or cause the aircraft to become a danger to person or property, it is an aircraft component and the modification must be approved. This definition includes abnormal use that could result in damage to the aircraft with the lock installed, such as inadvertent forcing of controls.

Evaluation of the security device must consider inadvertent operation of the aircraft with the device installed. If the aircraft engine cannot start with the device installed, or any limitation of the aircraft controls with the device installed is immediately obvious to the pilot, and the device is well flagged to absolutely ensure it cannot be missed by the pilot, and the device must be entirely removed from where it can influence the aircraft controls, then it can be assumed that in-flight operation will not be a factor.

Regulation 244 of CAR 1988 requires all locking and safety devices to be removed before flight. Also, Civil Aviation Order (CAO) 20.2 requires that locking devices must be removed before flight, but focuses on external locks. However, these requirements are remote from everyday operations, and Regulation 232 of CAR 1988, requires every operator to have a flight check system. That flight check system should require any security locks installed, either specifically or generally, to be removed before flight.

If the Registered Operator is in any doubt regarding whether the device is an aircraft component they should consult with a regulation 21.437 of Civil Aviation Safety Regulations 1998 (CASRs) authorised person or CASA's Airworthiness and Engineering Support Branch.

If the security device does not require approval, the Registered Operator can take responsibility for ensuring that the device is safe as manufactured, installed on the aircraft and operation of the aircraft with the device installed.

If the security device requires approval then the Registered Operator will need to initiate action to ensure approval is complete and the device installed prior to the OTS implementation date.

Aircraft Design Standards

Under CAO 100.6 and regulation 21.101 of the CASR 1998 any modification must meet the design certification basis of the aircraft. The majority of small aircraft in Australia are designed to Part 23 of the US Code of Federal Regulations (CFR) or similar, which includes 14CFR 23.679, Control System Locks, and FAA Advisory Circular AC 21.17A. If the aircraft does not have a documented design standard, the intent of 14CFR 23.679 is a suitable design standard.

From 1963 14CFR 23.679 required; If there is a device to lock the control system on the ground or water, there must be a means to--

a. Give unmistakable warning to the pilot when the lock is engaged; and

b. Prevent the lock from engaging in flight.

This requirement was enhanced from 1995, but for most aircraft the 1965 requirement will satisfy the design certification requirements of CAO 100.6.

In addition, a design review of the security devices would require an analysis to:

- ensure that the device cannot damage the aircraft, including abusive action by an operator unfamiliar with the lock, and

- review pre-flight procedures required by Regulation 232 of CAR 1988.

The proposed aircraft operations may also require storage provisions within the aircraft to accommodate the security devices.

The approval of the design can include instructions for fitment and removal. Schedule 8 CAR 1988 permits a pilot to conduct a daily inspection of an aircraft, as authorised under Paragraph 42ZC (4)(d) of CAR 1988. Also, CAO 20.2 allows the pilot in charge to remove any external lock.

4. Recommendations

It is recommended that owners, operators and maintenance review their security devices installation to ensure that any security device complies with the regulations.

5. Enquiries

Enquiries with regard to the content of this Airworthiness Bulletin should be made via the direct link e-mail address:

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