

CIVIL AVIATION AUTHORITY — AUSTRALIA

CIVIL AVIATION ADVISORY PUBLICATION

Date: 1 March 1992

No: 42ZE-1(0)

SUBJECT: COMPUTER CONTROL REQUIREMENTS

IMPORTANT

This publication provides guidance when using computers for the control or certification of maintenance. The information in this publication is advisory only.

The Civil Aviation Regulations set out the legal requirements that must be complied with in relation to the subject matter of this publication. There may be a number of ways of ensuring that the requirements of the CARs are met. This publication sets out the method that is preferred and which experience has shown should, in the majority of cases, ensure compliance with the regulations. However, before using the information in this publication the user should always read the CARs listed in the reference section below to ensure compliance with the legal obligations of the CARs.

PURPOSE

Regulations 42ZE and 50A of the CARs provide for systems of certification and aircraft records to be employed. This publication describes the requirements of the Authority and provides guidance when using computers to achieve these functions.

STATUS

This is the first issue of CAAP 42ZE-1, and will remain current until withdrawn or superseded.

REFERENCES

This publication should be read in conjunction with Civil Aviation Regulations 42ZE, 50A and 50C.

HOW TO OBTAIN COPIES OF THIS PUBLICATION

Copies of this publication may be obtained from:

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1 - COMPUTER CONTROL REQUIREMENTS

1.1 There has been an increase in the use of computers for controlling aircraft maintenance, maintenance certifications and records. This publication gives guidelines for the control of computers used for these purposes.

1.2 Regulation 50C of the CARs requires a record of all maintenance to be kept. Computer systems used to control and record aircraft maintenance and certification should therefore, be capable of providing an audit trail which records all data manipulation. Provision needs to be made within the system for the records to be printed on hard copy and supplied to the Authority or an authorised person upon request.

1.3 To avoid data loss in the event of power interruptions, the computer system needs to be protected by features which:

- (a) detect variations in supply voltage;

- (b) provide an indication to the user that a power supply interruption has occurred; and
- (c) automatically transfer the power supply to a back-up system in the event of excessive supply voltage variations; or
- (d) produce a back-up copy of the data on a suitable storage medium each day the system is operated.

1.4 For security, it is recommended that back-up tapes or discs be stored in a secure, fireproof location remote from the installation.

1.5 Computer system software and data needs to be protected from unauthorised access.

1.6 A computer systems operation manual should be produced which contains:

- (a) a procedure that will ensure that system software cannot be corrupted where the system permits the periodic dumping of data held on consolidated tapes or discs intended for storage;
- (b) a copy of all hard copy documents used with the system; and
- (c) full details of any electronic certification procedures employed.

1.7 During commissioning of the computer system a testing period is required to be established in consultation with the airworthiness office having administrative control of the organisations records. To ensure that there is no possibility of having incorrect or corrupted records during this period, the traditional hard copy documentation will be maintained concurrent with the computer generated data until such times as the system's operation is acceptable to the Authority.

1.8 During the testing period a record should be raised containing a list of all problems encountered and corrective action taken. This will assist with the assessment of the system. This record should be separate from the system being tested.

1.9 A copy of the computer systems operation manual will then be made avail-

able to persons authorised to operate the system and supplied to the appropriate airworthiness office for information and retention.

1.10 Where a computer is used for aircraft component or material stock control a hard copy or back-up tape or disc must be retained to ensure traceability of stock.
