

ROYAL CANADIAN AIR FORCE



**VAN-CAL GENERAL INSTRUCTIONS
FOR SERVICE & CONTRACTOR
PERSONNEL ENGAGED IN THE
MOBILE CALIBRATION PROGRAM**

"REVISION"

NOTICE

**LATEST REVISED PAGES
SUPERSEDE THE SAME
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Insert revised pages into basic
publication. Destroy superseded pages.

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LIST OF RCAF REVISIONS

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PART 1**GENERAL**

1 The purpose of this EO is to establish basic requirements and assign responsibility for the calibration of all RCAF electronic/electrical test equipment.

2 Periodic calibration, minor repair and certification of all in-use electronic test equipment, in situ at user units, is essential at all levels of field maintenance in order to provide maintenance personnel with test equipment of known accuracy.

3 To accomplish this, an electronic/electrical test equipment calibration program has been instituted whereby a mobile calibration team will make regularly scheduled visits to RCAF stations on a twice yearly basis.

4 Detailed instructions covering the implementation of this program and the definition of terms pertaining to this activity are set forth in Part 2 and Part 3 of this EO.

5 Detailed instructions on use of the Calibration Van Receipt/Report Form is set forth in Part 4 of this EO.

APPLICABLE DOCUMENTS**SPECIFICATIONS**

6 The applicable RCAF Specifications are:

- Test 1-3 - Test Equipment, Electronic/
Electrical Calibration, Mobile
- Proc 101-9 - Quality Control in Mobile Calibration Vans

PUBLICATIONS

7 The applicable RCAF publications are:

- EO 00-5-4 - Engineering Order Requirements And Distribution Procedures.
- SB #12.1/07 - Calibration and Minor Repairs -Electronic/Electrical Test Equipment by Van Cal.

BASIC REQUIREMENTS

8 The following are basic requirements of the calibration program:-

- (a) All test equipment in use will be calibrated and certified at regularly prescribed periods.
- (b) Maximum calibration, minor repair and certification of test equipment will be accomplished at field level.
- (c) Secondary standards and accessory equipment will be maintained at RCAF Repair Depots and/or selected civilian contractor(s).
- (d) To ensure the integrity of the test equipment after it has been calibrated, a decal will be affixed to the instrument to seal it.

RESPONSIBILITY OF AFHQ

9 Air Force Headquarters shall establish the broad policies and standards relating to the repair, calibration and certification of test equipment.

RESPONSIBILITY OF AMCHQ

10 AMCHQ shall:-

- (a) Establish a measurement control system to maintain and assure the accuracy of all electronic and electrical test equipment used by RCAF activities.
- (b) Publish Engineering Orders covering technical procedures for accomplishing calibration and minor repair of test equipment.
- (c) Provide on-site maintenance support, including calibration, minor repair and certification, of test equipment on a regularly scheduled basis.

**RESPONSIBILITY OF OTHER
AIR COMMANDS & 1 AIR DIVISION**

11 Other Commands and 1 Air Division shall:-

(a) Establish an effective program of control of all electronic and electrical test equipment under the Command's jurisdiction.

(b) Make recommendations to AMCHQ for improvement on all calibration problems concerning technical data and logistic support.

RESPONSIBILITIES OF UNITS

12 The services to be provided to the mobile calibration team by the unit being visited are set forth in Part 2 of this EO.

PART 2

MOBILE CALIBRATION TEAM

1 The purpose of Part 2 of this EO is to define the qualifications, conditions and terms of reference under which the Members of the Mobile Calibration Team (MCT) manning the mobile calibration van are required to render their services. It also defines the duties and responsibilities of the various units in the RCAF.

GENERAL

2 The introduction into the Air Force of numerous and new complex types and models of both standard and specialized test and measuring equipment has made it necessary to provide mobile calibration teams and vans equipped with transfer standards and technical personnel capable of performing calibration and minor repairs to all types of in-use electronic and electrical test equipment. The requirement for continued employment of this facility will be reviewed yearly by AMCHQ and the necessary contractual coverage arranged.

DEFINITIONS

3 For the purposes of this EO, the following definitions apply:-

(a) Mobile Calibration Team (MCT) - Is a team which consists of qualified technical personnel who are provided by civilian contractor under contract with DDP. This team may include, as conditions permit, one or two service supplied personnel for on-the-job test equipment calibration training.

(b) Mobile Calibration Van (Van Cal) - Any self-contained mobile unit, equipped with TRANSFER STANDARDS, designated to effect calibration of RCAF "in-use" electronic and electrical test equipment.

(c) Calibration - The comparison of two instruments or measuring devices, one of which is a certified standard of known accuracy. The correction or adjustment of any out-of-tolerance variation in the accuracy of the instrument or measuring device being compared with the standard.

(d) Standard - (Measurement) - Equipment which is established as an authorized or recognized measure; equipment which serves as the basis on which the accuracy of other measuring devices is established and compared.

(e) Primary Standard - Equipment owned and/or controlled by the National Research Council, Ottawa, and recognized as the national standards for Canada.

(f) Secondary Standards - Equipment which is periodically calibrated against a primary standard, and which is considered to be of such an accuracy as to permit it to be used to calibrate lower standard equipment. Secondary standards are maintained and used in environmentally controlled conditions.

(g) Transfer Standards - Equipment, periodically calibrated against secondary standards, and which is considered robust and accurate enough to be transported to accomplish the calibration of "in-use" test equipment.

(h) Certification - The act of attesting that equipment has been calibrated and is within the specified limits of accuracy.

(j) Certification Seal - Any sealing device, attached or affixed to equipment which, when correctly inscribed and unbroken, indicates that the settings and adjustments have not been altered or disturbed.

(k) In-Use Test Equipment - All electronic/electrical test equipment listed on the articles-in-use ledger.

(m) Minor Repair - Inspection, disassembly, cleaning, replacement of common parts, re-assembly, lubrication and preliminary adjustments.

(n) Electronic/Electrical Test Equipment - Any formation of components and materials which has been constructed to measure, examine and/or calibrate the action of any type of equipment and which depends for its functioning on the electron flow in any medium such as a conductor, semi-conductor, vacuum or gas

on the interaction of electric or magnetic fields; on the generation of electro-magnetic energy or the detection of such energy. Special tools and ancillary devices are included, (electrical and electronic test equipment are included in this definition for all practical purposes).

(p) Designated RCAF Unit - The RCAF Unit to which the MCT is directly responsible. In the west the designated RCAF Unit is 10TSU Lincoln Park, in the east the designated RCAF Unit is 1132 TSD, Montreal and in Europe the designated RCAF Unit is 1 Air Division, Metz.

(q) Inspector - The RCAF Quality Control representative who is responsible for the RCAF Quality Control function at a facility and who is authorized to conduct quality audits on behalf of the RCAF.

PROCEDURES

4 The following procedures are to be used in implementing the calibration program.

DESIGNATED RCAF UNIT RESPONSIBILITIES

(a) The designated RCAF unit shall appoint a Project Officer who shall be responsible for:

(1) Implementing the itinerary of the MCT as directed by AMCHQ. This shall include notifying units approximately two weeks in advance of the approximate date of arrival and five days in advance of the exact date of arrival of the MCT. All messages pertaining to van movements will be sent info AMCHQ.

(2) Visiting and/or briefing station personnel, as required, on the details of the calibration program.

(3) Ensure that the MCT is supplied with small stocks of spare parts, and component parts, for minor repairs on test equipments. In the event of an emergency and where the RCAF are unable to supply the required parts, local purchases are to be arranged by the designated RCAF unit.

(4) Informing units of any change in personnel of the MCT, so that security clearance to the unit is not delayed.

(5) Performing quality control audits as outlined in PROC 101-9.

MCT RESPONSIBILITIES

5 The conditions governing services rendered by a contractor's Mobile Calibration Team are those outlined in the particular contract negotiated with the parent company, but normally the contract is written around the following conditions:-

(a) The MCT is to calibrate and seal test equipment submitted by the user unit.

(b) Minor repairs that are within technical and time limitations of the MCT, as determined by the engineer-in-charge, will be made as required prior to calibration. Small stocks of spare parts are to be maintained by the MCT for this purpose. Any equipment which cannot be repaired or calibrated is to be tagged with RCAF W5 tag by the MCT indicating the nature of the fault or unserviceability and returned to the user unit.

(c) A Calibration Van Receipt/Report form STATS 3001 attached to each instrument is to be completed as detailed in Part 4 of this EO. All the completed STATS 3001 forms, after having been receipted by the user or inventory holder, are to be dispatched to AMCHQ attention SODP/DC/SS, when the project is completed at the unit.

(d) For items of test equipment listed in Part 3 to Supply Bulletin SB #12.1/07 the MCT is to recommend write-off of items which are considered beyond economical repair. After appropriate action by the inventory holder, the MCT may salvage any useable parts from this equipment and return the scrap accumulation to the Station Supply Section.

(e) The MCT shall be directly responsible to the designated RCAF unit for the maintenance and continued calibration of all Transfer Standards installed in the vehicle, all test and measurement equipment and compiling the necessary calibration records, work data sheets, etc.

(f) The specialist officer (engineer) in charge of the team is responsible to the unit

CTSO or his delegate for the efficient programming and quality of workmanship performed by the team. Any problems arising during the visit of the MCT at the unit should be discussed with the CTSO and cleared, if possible, before departure of the MCT.

(g) The MCT is to conform with the administration regulations of the establishment to which they are visiting. The MCT is to work a minimum of 40 hours per man per week and may work up to 60 hours per man per week under terms of existing contracts.

(h) The MCT engineer shall submit a report of activities as detailed in para. 11.

(j) Procedures for Quality Control contained in PROC 101-9 are to be adhered to.

FIELD UNIT RESPONSIBILITIES

6 Unit CTSO - The unit CTSO or his delegated co-ordinator shall be responsible for:

(a) Selecting the most suitable site for parking the Calibration Van.

(1) The site should be as centrally located as possible to the major users of electronic/electrical test equipment.

(2) The site should not be too close to jet activities.

(3) In order to assist the environmental control conditions required inside the calibration van it shall be located under cover whenever possible.

(4) An adjacent marshalling room shall be provided where test equipment can be taken before and after calibration.

(5) The marshalling area should be suitably equipped with furniture, shelving, publications, and phone to aid the NCO in his duties.

(b) Appointing an NCO, who is familiar with the instruments to be calibrated, to carry out the responsibilities of the NCO in charge Marshalling Area as in para. 10

(c) Ensuring that unit security formalities, accommodation, meals and transportation, etc., are arranged for the MCT personnel where applicable and that adequate briefing of

the team on station administrative rules, regulations, etc. is carried out. The engineer in charge of the team shall be of officer status, the remainder shall be at least of Senior NCO status, and will be subject to the usual considerations accorded these ranks, such as mess privileges, etc.

(d) Arranging for issuance of Identification Cards to the MCT.

(e) Ensuring that the necessary power inputs are readily available for the MCT's arrival; these inputs are:

1 AIR DIVISION

115 VAC	60 AMPS	50-60 CPS
115 VAC	10 AMPS	400 CPS
28 VDC	25 AMPS	

CANADIAN BASED UNITS

115 VAC	150 AMPS maximum single phase	60 CPS
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115 VAC	30 AMPS maximum (where required)	400 CPS
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28 VDC	15 AMPS maximum (where required)	
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(f) Providing all required services (vehicular, communications, and construction engineering etc.) for the smooth operation of the MCT.

(g) To prevent undue delays in the calibration program, it is mandatory that EOs, handbooks, etc., for all equipment presented for calibration be placed at the immediate disposal of the calibration team. Where covering EOs, handbooks, etc., are not available they are to be demanded on a priority basis in accordance with EO 00-5-4.

(h) Carrying out Periodic Inspections of the Van-Cal to ensure that the housekeeping is adequate and that the movement of test equipment to and from the Marshalling Area is prompt and efficient.

(j) Canvassing of all sections prior to the departure of the MCT to ensure all test equipment has been submitted and no section has been overlooked.

(k) Preparing and submitting a report for the Commanding Officer. The report shall be as outlined for the MCT final report and may form the basis for the Commanding Officers comments.

REPAIR BY UNIT PERSONNEL

7 Extensive repair by unit personnel of electronics test equipment which has been certified by the application of a seal or decal is to be discouraged. Test instruments are not to be subjected to repair except under the following circumstances:

(a) The equipment is unserviceable and in short supply and the loss of its use would restrict capabilities of the section.

(b) The repair shall primarily consist of the replacement of batteries, fuses, electron tubes and other plug-in units, which in no way affects the calibration of the equipment.

(c) When repair has resulted in circuit component replacement, resistors, capacitors, etc., the equipment must be extensively checked against similar or other units of test equipment to confirm that the limits of tolerance for the unit have not been exceeded.

(d) Complete records shall be raised and held. Entries shall show the nature of the fault, the rectification and tests performed to determine the degree of accuracy in accordance with applicable procedures or instructions.

(e) The records shall show the signature of the officer or NCO granting authorization for the action.

(f) All records and data shall be presented with the equipment to the MCT on the next visit. Test equipment that has been submitted to the MCT and found unserviceable and for which replacement parts are on order, but do not arrive prior to the departure of the team, are to be returned to the inventory holder for normal repairable equipment requests (RER) action as per RCAF pamphlet 98.

USER SECTION RESPONSIBILITIES

8 The following points shall be considered prior to submission of test equipment for calibration:

(a) All accessories must be accounted for in advance of the Van-Cal visit and supplied with the test equipment to the MCT. Shortages, as revealed by checking CAP 10, the relevant EO, TO and/or manufacturer's handbook must be listed on a correctly completed E330 Deficiency Tag. It is recommended that normal procurement action be initiated to rectify all such shortages.

(b) Ranges and modes of operation of each piece of test equipment must be checked for operational capability. Any and all defects are to be entered on the reverse bottom portion of the STATS 3001 Report form under Additional Data in accordance with 6(p), Part 4, of this EO.

(c) Where unserviceabilities are noted such defects are to be recorded and immediate procurement action initiated for those parts required. A target date should be given, bearing in mind the short period the MCT will be sited at the unit.

(d) For those items which are not in catalogue (NIC) every attempt should be made to obtain a satisfactory replacement through local purchase order from an electronic supply house. Inabilities may be referred to AMC/TSU.

(e) The equipment is to be checked for cleanliness. Where necessary the application of solvent and/or paint should be used to improve the appearance.

(f) Check that the packing used for all movement of test equipment, to and from the area selected for the marshalling is adequate. The use of wicker hampers is suggested for the transportation of test equipment. Equipment moved by hand will not require packing. Items in transit whether packed or "in hand" should be accompanied by personnel familiar with the necessary care required, while handling test instruments.

(g) The inventory holder or his representative shall complete STATS 3001 in accordance with Part 4 of this EO.

RECEIPT OF TEST EQUIPMENT

9 The following procedure is to be carried out on receipt of test equipment after calibration.

(a) The test equipment returned to the user section, after having been processed through the MCT should receive an acceptance check IMMEDIATELY upon receipt. The equipment will have a decal or sticker attached by the MCT if the item is serviceable, it will also have a Test Data sheet accompanying it outlining the work that has been performed on the instrument by the MCT. Test Data Sheets accompany serviceable instruments processed by the Van-Cal, are to be retained and filed by the user as a permanent record. The Test Data sheets are to be made available to the Van-Cal, if required, when the instruments are re-submitted to the Van-Cal for calibration.

(b) A sample Test Data Sheet is shown in Appendix "D". Reproduction of the Test Data Sheet shall be made by the unit or station, and supplied to the Van-Cal, as required.

(c) Instruments requiring more than minor repair will be returned by the MCT to the user with a W5 RCAF Repairable Tag attached. The W5 tag will indicate the repair required and should be signed by the engineer-in-charge of the Van-Cal.

(d) Physical Check:

(1) Ensure that accessories are complete as per original list less E330 entries.

(2) Ensure that nuts, setscrews on dial controls or alignment adjustments are tight and sealed.

(3) Apply power if required and check out all ranges or modes of operation as outlined in the applicable EO or Handbook.

10 NCO in charge Marshalling Area responsibilities are:

(a) The NCO in charge of the Van-Cal Marshalling Area (hereafter referred to as NCO in charge MA) shall be selected by the station CTSO or his delegated co-ordinator.

(b) He should be of Cpl. Rank or above and be familiar with the equipment to be submitted, conversant with proper recording procedures, and familiar with the locations of various station sections presenting test equipment to the MCT. Since marshalling duties are extensive and often time consuming it is sug-

gested that the delegated NCO should not be considered eligible for other duties during the tour of the MCT.

(c) He should, if necessary, be provided with a set of those sections of CAP 10 which lists the equipment submitted, and applicable sections of the Identification Number Index.

(d) The NCO in charge MA shall be required to examine each piece of test equipment submitted and check the attached STATS 3001 Form for completeness and correctness of entries.

(e) The NCO in charge MA shall check attached E330 tags for proper entries.

(f) The NCO in charge MA shall raise and maintain a proper register for all incoming and outgoing items of test equipment.

(g) The NCO in charge MA shall relay to Station Supply Section all required replacement items as made known by the MCT leader. These requirements for the most part will be "C" class; resistors, capacitors, coils, relays, switches, contacts, connectors, etc. The components may be listed by RCAF section and reference number. However, most of the parts will be listed by the manufacturer's part number or USAF catalogue number, or simply by the value, tolerance and rating. The NCO shall then be required to use CAP 10 Identification Number Index and such other sources as may be available to determine the RCAF section and reference number and place the order.

(h) When the SSO cannot fill a requirement which is urgent, the NCO in charge MA shall canvass all likely user sections in an attempt to obtain the item. Inabilities shall be referred to AMC/TSU.

(j) The NCO in charge MA may be supported by one or two airmen, one of whom should hold an ME6.

(k) The NCO in charge MA shall scrutinize the methods of transporting the packaging and if these are inadequate report such to the co-ordinating officer.

(m) The NCO in charge MA shall direct the section concerned to pick up and deliver the

test equipment as and when requested by the MCT leader. Where the rate of flow of equipment to and from the marshalling area is slow the NCO in charge MA shall be ready to deliver and pick up those equipments as requested by the MCT leader. Every attempt is to be made to ensure an uninterrupted flow of test equipment into and out of the marshalling area.

REPORTS

ALL UNITS IN CANADA AND 1 AIR DIVISION - FINAL REPORT

11 A final report is to be completed by the engineer-in-charge of the MCT and discussed with the CTSO or his representative before departure from the unit. The report is to be addressed to the Commanding Officer of the unit and is to be prepared in five copies, each being signed by the engineer-in-charge. One copy of this report is to be retained by the MCT as a file copy, the other four are to be sent to the Station Commanding Officer. The Commanding Officer will then add his comments and forward one copy of the report to his Command Headquarters and two copies to AMCHQ. Copies of the final report are to reach AMCHQ attention SAVO/ES within seven (7) working days from the date the MCT departed from the unit. AMCHQ will forward a copy, including any necessary direction to the designated RCAF unit other than 1 Air Div. This report, which should be narrative in form, is to summarize for the Commanding Officer the general condition of the test equipment presented for calibration. It should point out any seeming malpractices and make recommendations for alternate equipments if the Van-Cal consider certain types of equipments obsolete. The Van-Cal has no decisive voice in declaring equipments obsolete. The unit can only consider their advice as a recommendation. The report should contain, where applicable, preferences for certain types or models or equipment, and the reasons(s) for such. A properly made out report will materially aid the Commanding Officer in assessing the overall condition of the test equipment on his unit, and aid AMCHQ in the future procurement of additional items of test equipment. In addition to the above, the report shall include:

- (a) All problems, difficulties and recommendations not reported previously by message.
- (b) Total number of pieces of test equipment submitted to the MCT.
- (c) Total number of pieces rejected and sent to R&O.
- (d) Total number of pieces found completely within specifications.
- (e) Total number of pieces adjusted and calibrated only.
- (f) Total number of pieces repaired and returned to useful service on the site.
- (g) Total number of pieces recommended to be written off, reduced to scrap, and spares.
- (h) Total number of man-hours required for the project.
- (j) Date of arrival at and departure from the unit.

NOTE

Van-Cals, such as are located at 6RD and Station Clinton, shall submit a project report every three months. The project report is to contain the same information as the final report detailed above.

AMCHQ is to be requested to supply extra copies of this report if addressees other than the above, require this information.

The requirement for the MCT to submit weekly reports for the contractors use is in no way to be affected by the above reporting procedure.

The CTSO or his delegated representative is to submit a STATS 318 through his CHQ on all test equipment which he considers has been improperly calibrated or repaired by the Van-Cal, determined by the acceptance check performed

immediately after receipt from the Van-Cal, as in Part 2, para. 9. Any other unsatisfactory aspect of the Calibration program performed at the unit, should also be reported by STATS 318.

The MCT will use supplied calibration procedures when the latter are available. Where no calibration procedures exist, the engineer-in-charge of the MCT shall report on the procedure he had adopted on any particular piece of test equipment.

and this information is to be included in his final report.

CHANNELS OF COMMUNICATIONS

12 The channel of communication on problems related to workmanship or other activity on the part of the MCT requiring the attention of the inspection authority shall be:-

- (a) Minor complaints shall be presented to the unit Van-Cal co-ordinator for resolution. An omnibus UCR STATS 318 shall be raised

where the nature or number of complaints warrants attention from the applicable TSU and in each instance a copy of the UCR is to be forwarded to the TSU.

(b) Complaints or defects requiring immediate investigation shall be directed by

message to the TSU with an information copy to AMC.

13 All correspondence pertaining to the Mobile Calibration Program is to be identified by using the code word "Van Cal" at the beginning of the correspondence.

PART 3

REMOTE UNITS

GENERAL

1 Certain RCAF Units cannot be visited by a Mobile Calibration Team because they are in remote areas and are inaccessible or it would be uneconomical for the mobile van to visit the unit. In these cases, bearing in mind that all test instruments should have a calibration check every six months, it is the responsibility of the parent Command Headquarters and the unit concerned, to transport regular consignments of test equipments to and from a designated calibration facility.

2 For remote sites in Canada: Whitehorse, Resolute Bay, Fort Churchill, Goose Bay, Gander and Torbay, 6RD in Trenton is the designated Calibration Centre. 6RD is to be notified at least 2 weeks in advance of all

consignments of instruments to be calibrated. The correspondence is to list all instruments which will be consigned and identify clearly those instruments in short supply and instruments whose loss would vitally restrict the capabilities of the user section. 6RD will provide replacements for these critical items upon receipt of the above information. Transportation priorities and supply procedures to be followed are contained in Supply Bulletin SB 12.1/07.

3 For sites in Europe, which have test instruments to be calibrated and are not visited by the Mobile Calibration Units, the designated calibration facility is Van Cal 3, when situated at 2(F) Wing Grostenquin, France. Supply Bulletin SB12.1/07 procedures are to be followed as in para. 2.

PART 4

CALIBRATION VAN RECEIPT/REPORT FORM

PURPOSE

1 The purpose of this reporting procedure is to gather data on the calibration and repair of test equipment from which summaries may be derived. These summaries are produced semi-annually by Electrical Accounting Machine processes and are used by specialist officers at AMCHQ to:

- (a) Draw attention to articles unreliable in service.
- (b) Facilitate standardization studies.
- (c) Draw attention to items requiring product improvement modification.

2 The instructions contained in this Part detail the procedures to be followed by:

(a) Inventory holders to submit articles of equipment to calibration vans for test and repair.

(b) Technicians in calibration vans to record the work carried out on items of equipments processed through the VanCal on STATS 3001.

3 The methods used in the procedure are intended to provide:

(a) An easy means of receipting articles passed between the inventory holder and the calibration van.

(b) A report to be completed by the van technician which has been partly filled out by the inventory holder.

(c) A method of presenting information to the Electrical Accounting Machine (EAM) section at AMCHQ which facilitates punching of EAM cards.

(d) Appendix "B" depicts a sample summary of the reports which is used by AMCHQ specialist officers.

4 The STATS 3001 Reports derived from this procedure are to be forwarded to AMCHQ

by the MCT at the completion of each calibration visit to a station. Fixed installations (6RD, Clinton) are to forward their accumulation of report cards once each month.

THE RECEIPT/REPORT FORM

5 The form used in this reporting procedure consists of two pages joined together by a common stub. The top page (yellow) is to act as a receipt to the inventory holder, while the article of test equipment is being processed through the calibration van. Carbon paper is interleaved between the pages, therefore all the data written on the receipt portion will be transcribed to the report card. Each form is serially numbered in the upper right-hand corner of the receipt and the report card, and on the common stub.

NOTE

See Appendix "A" for sample Receipt/Report form.

(a) A "Block", as will be referred to in these instructions, consists of a numbered block in which one (and only one) digit of information may be placed. The digit may consist of a number, a letter or a punctuation mark.

(b) A "Field" consists of a number of blocks. For example the field entitled "Section" contains blocks 1 to 5, the field entitled "Code" contains only one block (6) and the field entitled "Reference Number" contains blocks 7 to 22.

(c) To distinguish between the numeric digit "one" and the letter "1" the numeric digit is to be written as a single vertical stroke. The letter "I" is to be entered as a vertical stroke with a small bar across the top and the bottom of the stroke.

(d) If the information called for in any field is not available, leave that field blank.

(e) It is anticipated that the fields which designate "Type or Model" and "Serial Number" have been allotted sufficient blocks to allow for proper insertion of any numbers encountered. However if a Type or Model or

Serial Number is found to contain more than ten digits make no attempt to place it in the field. Leave the field blank and write in the number on the reverse side of the report form in the Additional Data area. Do not use punctuation marks in making these entries. Example; if the Type and Serial Numbers of the equipment were:-

Type or Model	Serial Number
TS-685-72	141/67-21

These are to be written in as follows:

Type or Model	Serial Number
TS68572	1416721

(f) A Receipt/Report form is to be completed for each article of equipment except as instructed in para. 8(k).

(g) This reporting procedure is not to be used by vans whenever self-calibration or inter-checking of equipment is carried out.

(h) Supplies of the Receipt/Report form are available through normal supply channels.

METHOD OF COMPLETING THE RECEIPT

6 The inventory holder or his representative is to complete the receipt portion of the form in the following manner.

(a) "Section"(Blocks 1-5) - This field is to contain the section number of the item. Blocks 1, 2 and 3 are to be entered with the numerical portion of the number with the last digit in Block 3, and Blocks 4 and 5 are to be entered with the alphabetic portion of the number with the last digit in Block 5, see Figure 4-1.

(b) "Code"(Block 6) - This Block indicates the type of reference number of the article. If the reference number is an RCAF reference number, enter the digit "0" in the Block. If the reference number is a manufacturer's number, enter the digit "5", etc. Types of reference numbers are indicated in CAP 10 (RCAF Supply Catalogue) under the column entitled "RCAF Code".

(c) "Reference Number"(Blocks 7-22) - If the reference number is a code "0", enter it to the right in this field - that is so that the last digit of the number will be placed in Block 22. If the reference number is other than code "0" enter it to the left - that is so that the first digit is in Block 7. If the reference number is a NATO Catalogue number, enter it in the field with punctuation marks. (A NATO number will completely fill this field), see Figure 4-2.

(d) "Type or Model"(Blocks 26-35) - Enter the type or model of the equipment in this field with the first digit in Block 26.

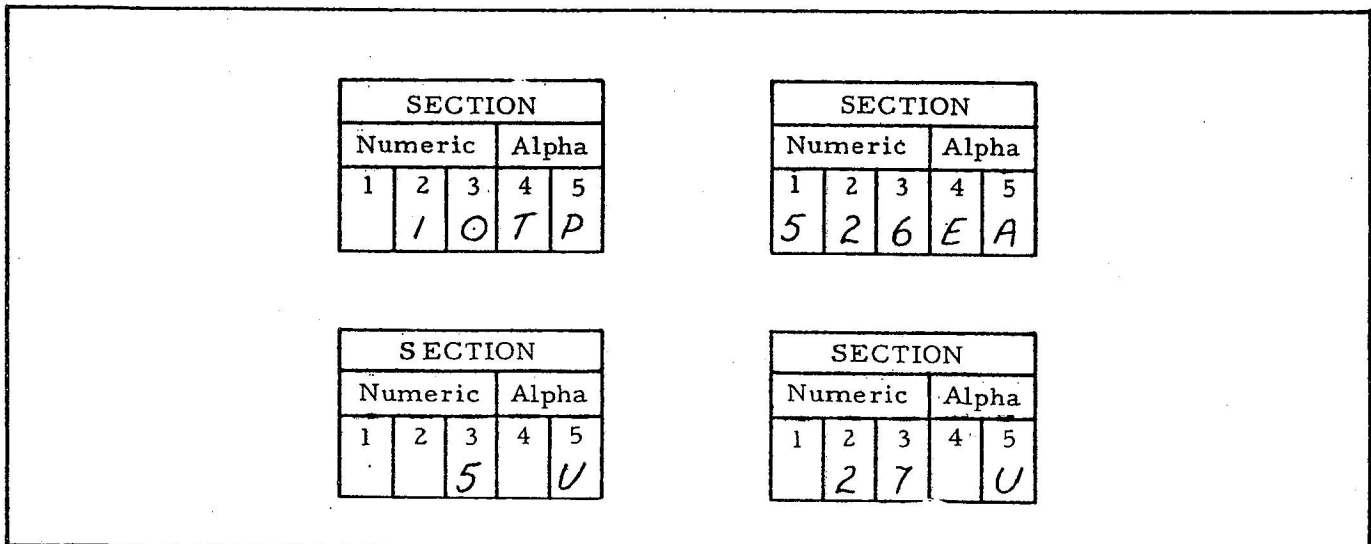


Figure 4-1

SECTION					CODE					REFERENCE NUMBER											
Numeric			Alpha																		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
	1	0	T	P	O										1	2	7	2	8	4	6

SECTION					CODE					REFERENCE NUMBER											
Numeric			Alpha																		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
	2	7	U	L	5	8	2	1	2	7	5										

SECTION					CODE					REFERENCE NUMBER											
Numeric			Alpha																		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
	1	0	E	C	8	5	8	0	5	-	2	1	-	8	0	0	-	5	6	8	5

Figure 4-2

(e) "Serial Number" (Blocks 36-45) - Enter the serial number of the equipment in this field with the first digit in Block 36.

(f) "Unit" (Blocks 46-48) - Enter in this field the unit location code number as shown for the station, squadron, etc., in Appendix "A" to EO 00-10-1.

(g) "Section" (Block 49) - Enter in this block the letter which indicates the SECTION of the UNIT. The list of section abbreviations is shown on the front face of the receipt portion of the form.

EXAMPLE

If the flight simulator section of Station Uplands was submitting a piece of test equipment for calibration the entry in UNIT and SECTION blocks would be in accordance with Figure 4-3.

(h) "Date" (Blocks 50-55) - Enter in this block the date on which the receipt was made out. The day of the month is to occupy Blocks 50 and 51 and is always to be a two figure group. Days 1 to 9 are to be entered as 01, 04, 09 etc. The month is to occupy Blocks 52, 53

and 54 and is to consist of the first three letters of the month. The year is to be indicated in Block 55 by entry of the last digit of the year, see Figure 4-4.

(j) The remaining areas A, B, C and D are intended to provide information which will facilitate the handling of the article between the inventory holder and the Calibration Van.

(k) "Prepared By" (Block A) - The inventory holder or his representative is to print his rank and name in this block.

(m) "Telephone Number" (Block B) - The local telephone number of the person entered in Block A is to be entered in this space.

UNIT			SECT
46	47	48	49
5	1	4	S

Figure 4-3

4 January 1960	DATE						30 October 1958
	50	51	52	53	54	55	
	O	4	J	A	N	O	
6 February 1959	DATE						10 November 1961
	50	51	52	53	54	55	
	O	6	F	E	B	9	
	DATE						
	50	51	52	53	54	55	
	1	O	N	O	V	1	

Figure 4-4

(n) "Brief Description of Article" (Block C) - Enter in this block one or, if necessary, two words which will give a brief description of the article, i.e., "Multimeter", "Scope", "Generator", etc.

(p) If the instrument being submitted to the Van Cal is unserviceable or suspect unserviceable, a brief description of the unserviceability and area of suspect shall be entered on the reverse bottom half portion of the STATS 3001, under Additional Data, by the user section.

NOTE

This procedure replaces the requirement for a W5 repairable tag to be used on repairable instruments going to the Van Cal. If the instrument must be returned for R&O the W5 tag will then have to be used in accordance with supply regulations and affixed by the MCT.

FORWARDING OF EQUIPMENT TO VAN

7 When the yellow receipt portion has been completed by the user section or inventory holder the whole form is to be attached to the article and taken to the Marshalling Area where Block D of the receipt will be signed by the person receiving the equipment. The receipt is then detached from the form by tearing along the perforated edge and is to be retained by the inventory holder as his claim check for the article while it is in the van.

METHOD OF COMPLETING THE REPORT

8 The engineer-in-charge of the calibration

van is to ensure that the STATS 3001 is completed in accordance with instructions as detailed below:-

(a) "Date Last Check" (Blocks 56-61) - If known the date on which the article was last checked is to be placed in this field in accordance with instructions contained in para. 6(h).

(b) "Seal" (Block 62) - If the item had been sealed and the seal was broken enter the digit "1" (one) in this block regardless of the serviceability of the equipment.

(c) "Cal" (Block 63) - If the item was found serviceable and the calibration was checked within specifications, place the letter "C" in this block. If the item was adjusted only to render it serviceable and bring the calibration within specifications, place the letter "A" in this block.

(d) "C & R" (Block 64) - If the article required repairs and calibration (with or without replacement of parts) to be made serviceable, enter the letter from the following list which best describes the condition.

(1) "N" - Normal or superficial repairs including replacement of tubes, batteries, indicator bulbs etc. following normal failure.

(2) "M" - Component replacements which, in the opinion of the engineer-in-charge are necessary as a result of poor design or production.

(e) "R & O" (Block 65) - If the item was beyond the repair capability of the van and was recommended for return to a repair and overhaul contractor, enter the digit "1" (one) in this block.

(f) "Scrap" (Block 66) - If the item was considered beyond economical repair and was reduced to scrap and spares (in accordance with current instructions on such disposal) enter the digit "1" (one) in this block.

(g) "No EO" (Block 67) - If adequate engineering orders were not available to the van technician to repair the article, the digit "1" (one) is to be placed in this block.

(h) "Manufacture" (Blocks 68-72) - To ensure standardization and to facilitate machine sorting of EAM cards produced from the reports each manufacturer is to be identified by the number allotted to him in the "Federal Supply Code of Manufacturers Numbers". As this publication is quite voluminous and as the number of manufacturers dealt with in this reporting procedure is relatively small, an extract of names and numbers has been prepared and is shown in Appendix "C". This table requires frequent revision and, as its use is limited to the technician in the calibration vans and specialist officers at AMCHQ, revisions will only be forwarded to them. The manufacturer's number is normally composed of five digits although some four digit numbers may be encountered. Determine the manufacturer's code number and enter it in this field with the last digit in Block 72. If the manufacturer's number is not available from the list, leave the field blank and enter the manufacturer's name and any address information which may be available on the equipment on the reverse side of the report card in the "Additional Data" area. This will initiate revision action to the list at AMCHQ.

(j) "Van" (Block 73 and 74) - Enter in these blocks the number of the calibration van, with the last digit in Block 74.

(k) There are instances where an inventory holder may have a relatively large number of articles of the same SECTION and REFERENCE number which require calibration. A specific example is 9C/50 Dosimeters. To obviate the requirement to compile individual receipts and reports in these cases the following procedure may be used.

(1) The inventory holder is to:

a. Prepare one receipt/report form for the total quantity of items leaving the field "Serial Number" (Blocks 36-45) blank.

b. Enter the quantity of the item in the upper right-hand corner of the receipt directly below the receipt serial number.

(2) The calibration van is to carry out the work necessary on the items and:

a. Prepare one new report card for each category (Blocks 62-66), enter the digit "1" (one) in the category block and enter the total quantity of items in that category in the upper right-hand corner of the report card in the space directly below the wording "STATS 3001".

b. Leave the "Serial Number" field (Blocks 36-45) blank and enter the serial numbers of all items in that category on the reverse of the report card in the "Additional Data" area.

c. Destroy the original report card.

(m) When the article(s) are returned to the inventory holder he is to acknowledge completion of the transaction by signing and dating the report card in Blocks E and F. The card is then to be detached from the stub.

APPENDIX "A"

CALIBRATION VAN EQUIPMENT RECEIPT

SECTION					CODE		REFERENCE NUMBER															
Numeric			Alpha		6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	

TYPE or MODEL										SERIAL NUMBER										UNIT		SECT	
26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49

DATE						SECTION (BLOCK 49)			BLOCK 49 (VAN 4 ONLY)		
50	51	52	53	54	55	"A" Armament	"V" Vehicle	"O" Officers' Training	"T" Telecom (Air)	"C" Maintenance (CE)	"X" Guided Missiles
						"G" Telecom (Ground)	"M" Maintenance (AE)	"B" Basic Electronics	"R" Telecom (Radar)	"S" Flight Simulator	
						"I" Instrument	"E" Electrical		"N" Nuclear		

A. PREPARED BY (PRINT)	B. TELEPHONE NUMBER
RANK NAME	

C. BRIEF DESCRIPTION OF ARTICLE	D. (REC'D VAN CAL)	RETAIN THIS RECEIPT TO CLAIM ARTICLE FROM CALIBRATION VAN.
---------------------------------	--------------------	--

CONDENSED INSTRUCTIONS FOR COMPLETING THIS FORM ON REVERSE SIDE.

CALIBRATION VAN REPORT STATS.3001

SECTION					CODE		REFERENCE NUMBER															
Numeric			Alpha		6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	

TYPE or MODEL										SERIAL NUMBER										UNIT		SECT	
26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49

DATE THIS CHECK						DATE LAST CHECK						SEAL	CAL	C&R	R&O	SCAP	NO	MANUFACTURER	VAN				
																	EO						
50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73

A. PREPARED BY (PRINT)	B. TELEPHONE NUMBER
RANK NAME	

C. BRIEF DESCRIPTION OF ARTICLE	D. REC'D (VAN CAL)	E. REC'D (INVENTORY HOLDER)	F. DATE
---------------------------------	--------------------	-----------------------------	---------

ADDITIONAL DATA ON REVERSE

Sample Receipt/Report Form (Front)

CONDENSED INSTRUCTIONS FOR COMPLETING CALIBRATION VAN EQUIPMENT RECEIPT

(For Complete Instructions Refer To EO 00-50-12, Part 4)

SECTION (Blocks 1 - 5) Enter the section number of the item with the last digit of the numeric portion of the number in Block 3 and the last digit of the alphabetic portion in Block 5.

CODE (Block 6) Enter in this block the type of reference number as shown for the article in CAP 10.

REFERENCE NUMBER (Blocks 7 - 22) If the entry in Block 6 was "O", enter the reference number so that the last digit falls in Block 22. If it was any digit other than "O" enter it so that the first digit falls in Block 7. If the reference number is a NATO number enter it complete with dashes. (A NATO number will fill this field).

DO NOT USE PUNCTUATION MARKS IN ANY OTHER PLACE ON THIS FORM OTHER THAN THAT REQUIRED ABOVE.

TYPE OR MODEL (Blocks 26 - 35) Enter the type or model number with the first digit in Block 26.

SERIAL NUMBER (Blocks 36 - 45) Enter the serial number with the first digit in Block 36.

UNIT (Blocks 46 - 48) Enter the number of your unit as shown in Appendix "A" of Engineering Order 00-10-1.

SECTION (Block 49) Enter in this block the letter which indicates the section of the unit as shown on the front face of this form.

DATE (Blocks 50 - 55) Enter the date of preparation of the form. This entry is always to consist of six digits. Blocks 50 and 51 are to show the day of the month as a two digit group, 01 (First), 07 (Seventh), 10 (Tenth), 22 (Twenty Second) etc. Blocks 52, 53 and 54 are to contain the first three letters of the month as Jan., Mar., May, etc. The last digit of the group is to contain the last digit of the current year.

BLOCKS A AND B Are to contain the rank, name and telephone number of the person preparing the report.

BLOCK C Enter a one or two word description of the article which may be of assistance in identifying the article.

ATTACH THE COMPLETED FORM TO THE EQUIPMENT AND FORWARD TO THE VAN. THE RECEIPT WILL BE SIGNED AT THE VAN.

ADDITIONAL DATA

THE VAN TECHNICIAN IS TO ENTER IN THIS SPACE ANY ADDITIONAL DATA WHICH MAY AMPLIFY THE REPORT.

APPENDIX "B"

Unit	Sec	Code	Ref	Manuf	Type	Serial	Last ch	This ch	Seal	Cal	C&A	C&R	R&O	Sec	Van
512	10	0	115509	00781	AR12	124588	13Oct8	02Mar0	1	1				T	2
				00781	AR12	13398	21Jan9	04Jan9			1			R	1
				00781	AR12	10677	04Oct8	03Feb9				N		W	1
				00781	AR12	9898445	09May9	21Jan0	1	1				R	2
								*	2	2	1	1			
				00752	127G	774893	21Oct7	20Jan0				M		W	2
				00752	127G	77389	08Jul8	24Dec9	1	1				M	3
				00752	127G	56545	28Jun8	15Jan0						R	1
								*	1	1					
								**	3	3	1	1			
				80250	272792	45939	23Sep7	03Dec9						W	2
			115510	80250	272792	663388	20Aug6	13Jan0	1	1				T	3
								*	1	1					
				99837	ATJ219	873308	12Jul19	15Jan0			1			R	2
				99837	ATJ219	745638904	10Apr7							T	3
								*		1					
								**	1	2	1	1			

APPENDIX "C"

Federal Catalogue Number		Federal Catalogue Number	
00656	Aerovox	89507	Lear
35026	Addisson	85529	Leeds and Northrup
81051	Aircraft Appliance & Equipment	93576	Marconi
00781	Aircraft Radio Corp.	81574	Marsland Engineering
00752	Airborne Instruments	35515	Marsland Precision Equip.
70210	Airesearch Co.	39519	Measurement Corp.
94332	American Electroneering	35533	Measurement Eng. Ltd.
00451	American Electric Corp.	81349	MIL
83290	American Radio Corp.	86329	(RH) Nichols
02475	Atlantic Electronic	44197	Norton Elect.
35103	Avro	01794	Northern Electric
82050	Babcock	88183	Northern Radio
35104	Back Simpson	46859	Philco
88598	Ballantyne	04458	Polytechnic Research
06774	Belmont	83475	Potter
06840	Bendix	48560	Precision Apparatus
07239	Biddle	02348	Pye
70998	Bird	08974	Radiometer
07980	Boonton Radio	88010	RAF
88886	Calldyne	49680	Radio Techs. Lab.
00056	Canadian Aviation Electronics	74222	Readrite
05097	Canadian General Electric	77561	Research Enterprises Ltd.
35201	Canadian Research Inst.	49671	RCA
13259	Clough-Brengle	74238	Rogers Majestic
91553	Cossor	83246	Radio Television Supply
0627	Dawe	54294	Shallcross
15909	Daven	55026	Simpson
82170	Dumont	57144	Stark
01747	Electronics Inc.	57733	Stewart Warner
83701	Electronics Devices	89435	Standard Telephone & Cable
98292	Empire Devices	96238	Stelma Corp
72264	Esterline-Angus	58094	Steeter-Amet Co.
0228	Evershed and Vignoles	98574	Servomechanisms
80250	Federal Electronics	04947	Stoddard
22128	Ferris	56232	Sperry
07239	Frahm	58474	Superior
99837	Gables Engineering	82675	Supreme
24359	General Communication Co.	78659	Sutton Horsely
24446	General Electric	80368	Sylvania
24655	General Radio	05858	Taylor
88869	Gertsch	03057	Tech Enterprises Ltd.
24930	Gilfilan	82679	Tech Material
28480	Hewlett-Packard	80009	Tekronix
88273	Heath	59433	Teletype Corp
28569	Hickok	96214	Texas Inst.
29262	Honeywell	99052	Topping
82577	Hughes Aircraft	60741	Triplet
02906	Jackson	00066	Ultra Elect.
04863	(HE) Jones	96304	Waveform
89414	Kay Electric	64959	Western Electric
35225	Lavoie	65092	Weston

APPENDIX "D"

SAMPLE TEST DATA SHEET

STN/UNIT _____ SECTION _____

Ref. No. _____ Date _____

Nomenclature _____

Serial No. _____ Manufacturer Code No. _____

PROCEDURE

Mechanical:

1. Accessories
2. Visual Inspection
3. Mechanical Inspection
4. Fuses

Electrical:

1. Basic Meter Movement Check

FSD

Test

Standard

70% FSD

30% FSD

2. Power Supply Check

3. Calibration Adjustments:

4. Repair Details:

5. Remarks:

Performed by:

Van Cal Technician

Approved by:

Van Cal Engineer