

The Corps
of
Royal Canadian Electrical and Mechanical Engineers

RCEME Trades 1944-2020

A Reference Guide

Trade Specifications
Volume 1 - The Aircraft Trades



The RCEME Heritage Archives

RCEME Trades 1944-2020

A Reference Guide

Trade Specifications

Volume 1 - The Aircraft Trades

Contents of this Volume

This volume includes:

General information on the RCEME aircraft trades;

Aircraft Artificer, Group 4, 1959;

Airplane Technician, Groups 2 & 3, 1959; and

Helicopter Technician Groups 2 & 3, 1962

Introduction

RCEME Trades 1944-2020, A Reference Guide summarizes the trades that were part of RCEME when the Corps was formed in 1944, and follows the development, amalgamations, changes, and history from that time to the four trades that are part of RCEME today. During the research for that document, many trades specifications and standards were found in the Library and Archives Canada (LAC) and other repositories. These were used to prepare a thumbnail history of each trade in the main reference, but space precluded the inclusion of the complete trade specification and/or standard.

This “Trades Specifications” series supports the main document and includes the original trade specifications and references as they were found at the LAC and elsewhere. This is a source document for researchers. In general, the raw photographs of the LAC file pages have been converted to a searchable .pdf file. No attempt has been made to reformat the contents of the original files.

Guide to the Series

Because of the size of some of the files, the trades have been separated into several volumes, each containing the specifications for a group of trades. The series consists of:

Volume 1 - Aircraft Trades

Volume 2 - Armourer, Armament, and Weapons Technician Trades

Volume 3 - Body and Tire Repair Trades

Volume 4 - Driver and Driver Mechanic Trades

Volume 5 - Electrical Trades

Volume 6 - Instructor Trades

Volume 7 - Instrument Trades

Volume 8 - Metals, Machinist, and Welding Trades

Volume 9 - Radar and Fire Control System (1950s) Trades

Volume 10 - Radio and Telecommunication Trades

Volume 11 - Recovery Mechanic Trades

Volume 12 - Vehicle Repair Trades

Volume 13 - Other Trades

Volume 14 - Trade Reviews

Volume 15 - Post-Unification Trades

Volume 16 - RCEME Trades in 2020

Source Documents

This is a supporting reference for *RCEME Trades 1944-2020, A Reference Guide*. The list of sources for the main document is reproduced below. Where possible, the source document (or a relevant excerpt) has been scanned and placed on the RCEME Historical Database. Sometimes, a copy may be on the Internet Archive. One location of the primary document is included - there may be other copies in existence.

Primary sources include:

Instructions Regarding Trades Tests and Tradesmen's Rates of Pay, Canadian Army (Overseas), 1943. A copy is available in the Canadian War Museum under the call reference UB 337 I57 CWM Ref Tech 1943. Short reference in this document: [Trades 1943]. This document does not relate trades to a specific Corps. The relationship to RCOC(E) and later RCEME is inferred.

Instructions Regarding Trades Tests and Trades Testing, Canadian Army, 1944. Queens Printer, 1944. A copy is available in the Canadian War Museum under the call reference UB 337 C2 I5 CWM Ref Tech 1944. Short reference in this document: [Trades 1944]. This reference had two major amendments: AL 1 dated 1 January 1945, and AL 2 (not dated), both included in the reference. This reference relates to the Canadian Army as a whole, and not just the Canadian Army Overseas. The assignment of trades to Corps includes RCEME, which is evidence that it was updated after the formation of CEME/RCEME.

Canadian Army Routine Order (CARO) No. 4230 dated 15 March 1944. The Annexes to this CARO (and subsequent CAROs that amended CARO 4230) detailed the units and trades that were to be transferred to the new Corps of RCEME. The Canadian War Museum has a set of CARO.

Canadian Army Routine Order No. 6579 dated 20 May 1946. This was the first major postwar regrouping of Army trades and classification of tradesmen. A copy is available in the Canadian War Museum under the call reference Ref Tech Folio UB 505 C2 A7. Short reference in this document: [CARO 6579 (1946)].

Canadian Army Order No. 269-1 dated 8 April 1947. This order amplified and clarified [CARO 6579 (1946)] and is part of the new Canadian Army Orders series that replaced the Canadian Army Routine Orders in 1947. A copy is available in the Canadian War Museum under the call reference Ref Tech UB 507 A6 S8. It also announced that a new publication "Canadian Army Trades Tests 1946" would be issued, (which has not been found). Short reference in this document: [CAO 269-1 (1947)].

Canadian Army Order No. 269-1 dated 22 August 1949. Trades Designations, Groupings of Trades, Responsibility for Training and Corps Affiliation. This replaced and updated [CAO 269-1 (1947)]. It also assigned trades to specific Corps. A copy is available in the Canadian War Museum under the call reference Ref Tech UB 507 A6 S8. Short reference in this document: [CAO 269-1 (1949)]. This reference was amended in CAO 269-1 dated 6 February 1950, which is included as part of this source.

Canadian Army Order No. 269-1 dated 27 November 1950. Trades Designations, Groupings of Trades, Responsibility for Training and Corps Affiliation. This replaced and updated [CAO 269-1 (1949)]. A copy is available in the Canadian War

Museum under the call reference Ref Tech UB 507 A6 S8. Short reference in this document: [CAO 269-1 (1950)].

Canadian Army Order No. 269-1 dated 5 May 1952. Trades Designations, Groupings of Trades, Responsibility for Training and Corps Affiliation. This replaced and updated [CAO 269-1 (1950)]. A copy is available in the Canadian War Museum under the call reference Ref Tech UB 507 A6 S8. Short reference in this document: [CAO 269-1 (1952)].

There would appear to have been an update to CAO 269-1 in 1954, but the CWM does not have a copy of that CAO - DHH might.

Canadian Army Manual of Trades and Specialties. This detailed the Canadian Army trade standards and specifications and replaced the Canadian Army Trades Tests series. The manual seems to have come into effect by CAO 225-52 dated 18 November 1957. There is apparently no CAO 269-1 after that date. The RCEME trades extracted from this document are dated in the late 1950s and early 1960s. A copy is available in the Canadian War Museum under the call reference Ref Tech UB 337 C2 C3 n.d. This reference is not complete. A complete version may exist at DHH (apparently not). Short reference in this document: [CAMTS].

Files in the Library and Archives, Canada (LAC). There are files in the LAC on many of the RCEME trades in the 1950s and early 1960s. These files have been reviewed and the specific file reference is contained in Annex A for the specific trade in question. See also the Army Trades Committee paragraph below. Short reference in this document: [LAC - file reference].

A specific file at the LAC is RG24-C-1-a, Volume 2165, File HQS-54-27-35-320, Trades Training & Tests - RCEME - Policy 1944-1947. It is not complete, but provides documentary evidence of the DEME position on the creation and elimination of some trades. Where other official confirmation has not been found (e.g. in the Army Trades Committee files), this file has been accepted as an authority. Short reference in this document: [LAC - Policy - Training of Tradesmen, RCEME]

Army Trades Committee and Army Trades Committee Sub-committee files at the LAC. A specific series of files at the LAC are the minutes of the Army Trades Committee and Army Trades Committee Sub-committee from about 1950 to 1965. They are best located by using the LAC search engine. The minutes give the approval (and date) for trade actions, and are often accompanied by supporting documentation such as trades specifications. Short reference in this document: [LAC - ATC and LAC - ATCSC]. The Directorate of History and Heritage also has a copy of some of these files. Between DHH and the LAC, there should be a complete set.

Files in the RCEME Archives. The RCEME archives, currently located at the RCEME School, have a few trades files. Most date from the early 1960s. There is a separate list of all the files in the RCEME archives. Short reference in this document: [RCEME Archives].

Bennett, Thomas J. **Skill at Arms, A History of Canadian Army Trades including their Badges and Parachute Wings.** Bunker to Bunker Books, Calgary, AB, 2005. The book appears to be out of print. A copy is in the Canadian War Museum Library under the call number UC 535 C3 B458 2005. Short reference in this document: [Skill at Arms]. It is an outstanding reference work, and was used heavily in the creation of the first draft of this document. However, unfortunately it does not link to primary

sources, and has been replaced as a source document as primary sources become available. That said, few discrepancies have been found, and I have full confidence in this book as a source. It was my primary reference for relating the badges worn by the trades.

RCEME Historical Database. Documents of general and specific interest to RCEME have been placed on a Google drive, part of which is shared with the public. All files in the public section of the database can be downloaded. The database can be accessed through the history and heritage tab on the Corps of RCEME website. Supporting documentation is in the RCEME Complete Digital Archives on the same Google Drive. The supporting documentation (such as the raw document scans) is not available to the general public, but can be requested from the RCEME Historian if required. Short reference in this document: [RCEME Historical Database].

RCEME Trades Source Documents at the LAC (Postwar and Pre-Unification)

The following Policy of Training and Qualifications files have been located at the LAC. All files have been reviewed and relevant details, including trades specifications, have been photographed and a pdf file of the information has been created and placed on the RCEME Historical Database. In general, the information contained in the files is limited to a copy of the draft trades standard. It is a disappointing source, but provides an index to the trades that were in existence.

Policy of Training and Qualifications - Artificers 1951-1961. [LAC Reference: RG24-C-1-c, Volume/box number 31348, File number 3202-A15.]

Policy of Training and Qualifications - Body Repairman 1952-1959. [LAC Reference: RG24-C-1-c, Volume/box number 31348, File number 3202-B22.]

Policy of Training and Qualifications - Driver Mechanics (Wheeled) 1956-1958. [LAC Reference: RG24-C-1-c, Volume/box number 31349, File number 3202-D22/2.]

Policy of Training and Qualifications - Driver Mechanics (Tracked) 1950-1956. [LAC Reference: RG24-C-1-c, Volume/box number 31349, File number 3202-D22/1.]

Policy of Training and Qualifications - Electrical Mechanic 1955-1960. [LAC Reference: RG24-C-1-c, Volume/box number 31362, File number 3202-E14.]

Policy of Training and Qualifications - Fire Control System Technician (AA) 1955-1959. [LAC Reference: RG24-C-1-c, Volume/box number 31362, File number 3202-F9.]

Policy of Training and Qualifications - Fitters 1949-1950. [LAC Reference: RG24-C-1-c, Volume/box number 31362, File number 3202-F18.]

Policy of Training and Qualifications - Instructors (RCEME) 1950-1955. [LAC Reference: RG24-C-1-c, Volume/box number 31363, File number 3202-J2/7.]

Policy of Training and Qualifications - Instrument Technician 1950-1959. [LAC Reference: RG24-C-1-c, Volume/box number 31362, File number 3202-J11.]

Policy of Training and Qualifications - Machinist Fitter 1951-1962. [LAC Reference: RG24-C-1-c, Volume/box number 31363, File number 3202-M2/1.]

Policy of Training and Qualifications - Machinist (Metal) 1946-1965. [LAC Reference: RG24-E-1-c, Volume/box number 32842, File number 450-M1. RCAF file.]

Policy of Training and Qualifications - Master Vehicle Technicians 1954-1958. [LAC Reference: RG24-C-1-c, Volume/box number 31369, File number 3202-V8/M.]

Policy of Training and Qualifications - Master Weapons Technician 1955-1958. [LAC Reference: RG24-C-1-c, Volume/box number 31369, File number 3202-W8/M.]

Policy of Training and Qualifications - Projectionist Clerk. [LAC Reference: RG24-C-1-c, Volume/box number 31368, File number 3202-P49.]

Policy of Training and Qualifications - Radar Technician 1951-1954. [LAC Reference: RG24-C-1-c, Volume/box number 31368, File number 3202-R3.]

Policy of Training and Qualifications - Radio Technician 1955-1960. [LAC Reference: RG24-C-1-c, Volume/box number 31368, File number 3202-R12.]

Policy of Training and Qualifications - Recovery Mechanic 1953-1954. [LAC Reference: RG24-C-1-c, Volume/box number 31368, File number 3202-R11.]

Policy of Training and Qualifications - Tire Repairman 1952-1954. [LAC Reference: RG24-C-1-c, Volume/box number 31369, File number 3202-T18.]

Policy of Training and Qualifications - Typewriter Mechanics 1952-1956. [LAC Reference: RG24-C-1-c, Volume/box number 31369, File number 3202-T30.]

Policy of Training and Qualifications - Vehicle Mechanics 1950-1961. [LAC Reference: RG24-C-1-c, Volume/box number 31369, File number 3202-V6.]

Policy of Training and Qualifications - Vehicle Mechanics 1961-1963. [LAC Reference: RG24-C-1-c, Volume/box number 31369, File number 3202-V6.]

Policy of Training and Qualifications - Watchmaker 1952-1956. [LAC Reference: RG24-C-1-c, Volume/box number 31369, File number 3202-W4.]

Policy of Training and Qualifications - Weapons Technician 1954-1958. [LAC Reference: RG24-C-1-c, Volume/box number 31369, File number 3202-W8.]

Policy of Training and Qualifications - Welders 1952-1956. [LAC Reference: RG24-C-1-c, Volume/box number 31369, File number 3202-W6.]

General Information on the RCEME Aircraft Trades

MEMORANDUM

22
CAF → BDF 4-5-2-1 (ME 1B2)
4-5-2-2

RE 3666-1/10 (RE 1)

2 Jul 57

D Org (Through INT)

Specification of Trades and Specialties
Trades concerned with Aircraft Repair

1. A requirement now exists in the Canadian Army for tradesmen familiar with, and capable of servicing and repairing, the aircraft used by the Army.
2. RCNCF tradesmen are now being trained to fulfill this commitment, but no Army trades exist to which they can be reentered.
3. It is anticipated that the following RCNCF trades will suffice to cover this new field:

(a) Instrument Technician (Air)	Groups 2 and 3.
(b) Electrical Technician (Air)	Groups 2 and 3.
(c) Helicopter Technician	Groups 2 and 3.
(d) Aircraft Technician	Groups 2 and 3.
(e) Helicopter Artificer	Group 4.
(f) Aircraft Artificer	Group 4.
4. This group of trades was decided upon, in consultation with Capt E Bishop of The Helicopter Evaluation Unit, based on the known and proposed RCNCF commitment, and a study of the applicable RCAF trades.
5. The airframe and aero engine duties have been amalgamated at the group 2 level in each of the trades of Aircraft Technician and Helicopter Technician in order, to keep them separate would mean a very small and uneconomical number of tradesmen in either field. Also, the United States Army covers satisfactorily both of these fields in the one trade at the lower levels of qualification. The governing factor however for this amalgamation of trade duties was the fact that unlike the RCAF each tradesman is concerned with only one type of aircraft and can therefore handle the dual load more easily. This combination also reduces the number of tradesmen required to provide complete establishment coverage.
6. RCNCF proposed establishments have been prepared to cover the following units:

(a) Canadian Army Helicopter Evaluation Unit.
(b) No 1 Air Observation Post Flight.
(c) No 2 Air Observation Post Flight.
(d) Light Aircraft School, CJATC, Rivers Man.
7. Attached in duplicate, are proposed specifications for the following trades:

(a) Instrument Technician (Air)	Groups 2 and 3.
(b) Electrical Technician (Air)	Groups 2 and 3.
(c) Helicopter Technician	Groups 2 and 3.
(d) Aircraft Technician	Groups 2 and 3.
8. It is requested that the above trades specifications be approved and trades included in the Canadian Army Manual of Trades and Specialties.

9. The trade specifications for the artificer trades will be forwarded as soon as possible.

WJNH/4-5412/dmh

K. J. R. Dunlop
(J R Dunlop)
Colonel

Director of Electrical and Mechanical Engineering

Att

MEMORANDUM

HQ 3666-1/10 (Org 2B)

OTTAWA, 6 Jul 57

DEME

Aircraft Repair Trades - RCME

1. Reference HQ 3666-1/10 (ME 1) dated 2 Jul 57.
2. A job analyst of D Org has been assigned the task of preparing the trade specifications of the undermentioned proposed RCME trades for submission to the appropriate trade committees:
- | | |
|---------------------------|-------------|
| Instrument Technician Air | Gps 2 and 3 |
| Electrical Technician Air | Gps 2 and 3 |
| Helicopter Technician | Gps 2 and 3 |
| Aircraft Technician | Gps 2 and 3 |
3. The same officer will be assigned the proposed trades of Helicopter Artificer Gp 4 and Aircraft Artificer Gp 4 when the specifications are received.
4. However, this officer is proceeding on leave 6 Jul and will not be able to proceed with this job until early Aug.
5. In the meantime, the following information is requested so that full supporting data may be submitted to the Army and Inter-Service Trades Committee and Personnel Members Committee:
- (a) The reference material for paragraph 4 of each specification.
 - (b) The authority and policy for employing helicopters in the Army, using Army technicians.
 - (c) The authority and policy for replacing RCAF technicians by Army technicians in the two Air Op Flights and Light Aircraft School.
 - (d) The numbers, by trade, of Army technicians (incl ranks) required and a statement as to how they will be made available from within the present rank and trade structure.
 - (e) The estimated numbers, by trade and group, of those technicians who are expected to be qualified by 31 Mar 58.
 - (f) A statement as to how and where these tradesmen will be trained:
 - (i) On USA courses? Will this be a continuing policy? or
 - (ii) On RCAF courses? or
 - (iii) By RCME School when trained instructors are available? If the latter is anticipated, what will be the estimated requirement for instructors (incl rank); financial implications on new training equipment, accommodation, classrooms; etc directly related to training the new tradesmen.

John Wallis
(John Wallis)
Colonel
Director of Organization

MEMORANDUM

PA
HQ 3666-1/10 (NR 1)

In reply to
HQ 3666-1/10 (Org 28)
dated 8 Jul 57

21 Jul 57

D Org

Aircraft Repair Trades - RCEME

1. The following are submitted as answers to your questions, and the sub paragraph letters refer to similarly lettered sub paragraphs of paragraph five (5) of your memorandum:

(a) No reference material, other than that shown on the Artificer specifications, is available, as these trades are trained by US Army courses. As soon as possible, references will be acquired for the groups to which a trade test will apply.

(b) The policy for employing army personnel on helicopter repair has been set by the GCS - para 13, 14 and 15 of the 57/10 Meeting on 27 Mar 57 of the Army Council which state:

"13. The VOCS reported that the RCAF agreed that helicopters used by the Army are to be flown and maintained by Army personnel. The RCAF are also prepared to assist with the training and trade testing of our maintenance personnel and to loan us personnel initially. This will permit DOT and DREME to establish repair facilities for the proposed flight by this fall.

14. The VOCS is to recommend a suitable location for the helicopter unit.

15. The GCS directed that as Army Aircraft maintenance personnel become available they are to replace RCAF personnel on loan to the AHEU, and on the establishments of the AOP flights and the light aircraft school."

(c) The authority for using Army technicians for aircraft repair in the two AOPs and the LAC is as for (b) above.

(d) The tradesmen who will be required for this table are as follows, based on a preliminary survey of the probable establishment:

	WO	Sgt	Sgt	Cpl	Cfm	Total
Aircraft Artificer	1	3				4
Aircraft Technician			1	10	20	31
Electrical Technician (Air)			2	2	5	9
Helicopter Artificer	2	2				4
Helicopter Technician			3	9	18	30
Instrument Technician (Air)				2	5	7
						88

The plan for availability from within the present rank and trade structure is not known.

- (e) The estimated numbers of those who are expected to be qualified by 31 Mar 59 are as follows:

Aircraft Technician Group 2	- 1
Helicopter Technician Op 2	- 9
Electrical Technician Air	
Op 2	- 1
Instrument Technician Air	
Op 2	- 1

In addition 25 candidates for Aircraft Technician, 7 for Helicopter Technician, 6 for Electrical Technician (Air), and 5 for Instrument Technician (Air) have been proposed for courses in the US during 1957/58.

- (f) (i) All tradesmen are being, and will be trained by USA courses.
- (ii) All tradesmen on return from USA courses will be attached to the RCN, RCAF or DOT for in-job experience.
- (iii) Training at The RCNRM School is an aim for the distant future.

WJNH/4-2412/dmh

(J R Dunlop)
Colonel

Director of Electrical and Mechanical Engineering

(172)

→ BDF 4-5-2-1 (ME)
4-5-2-2

31 Aug 59

MEMORANDUM TO PTO:

1. The quantity of instrument and electrical repairmen required for aircraft work will be approximately 15 and 19 respectively in the period to 1964. (This is based on GS aircraft planning in effect as of Aug 59).
2. In view of the hesitation in regard to the introduction of a combined trade and the small number needed, it is now recommended that you proceed with the other trades and advise D Org we do not wish to create special trades for the instrument and electrical. The decision on these to be made after we have some user experience.
3. We can indicate on our establishments that the present tradesman must have the appropriate aircraft qualification to fill the vacancy concerned.

*The DOME
has concurred in
this action
MR*

MR Robinson
(MR Robinson)
Lt Col
DD (ES)

MEMORANDUM

HQ 3666-1/10 (ME 1)

10 Nov 59

D OrgRCME Trade SpecificationsAircraft Instrument and Electrical Repair Trades

1. Enclosed in duplicate are copies of D Org's draft for the proposed Aircraft Instrument Technician Groups 2 and 3 and Aircraft Electrical Technician Groups 2 and 3 with changes indicated in each.
2. In our memorandum of 3 Sep 59 it was stated that it was not desired to create special trades for aircraft instrument and electrical tradesmen at that time, due to the problems in combining these two diversified trades at the group 4 level. However, it has since been decided to delete the proposed combination.
3. Aircraft Instrument Technician and Aircraft Electrical Technician may now progress to Instrument Artificer and Electrical Artificer respectively. To carry out this progression the candidate should be assessed and possibly be required to take a period of in-job training or a short refresher course in his basic trade.
4. The enclosed draft trade specifications are approved by this Directorate. May they now be processed through the trades committees as soon as possible so that tradesmen may be granted new qualifications and also that certain establishments may be covered by qualified personnel.

J. A. Campbell
(RA Campbell)
Colonel

Director of Electrical and Mechanical Engineering

Encl.

JCH/4-5612/40

4-5-2-1
MEMORANDUM

HQ 2-70-72 (Org 2B)

27 Nov 59

DEME

(Attn: Plans & Trg)

Trade Specifications

Airplane Technician Groups 2 and 3
Helicopter Technician Groups 2 and 3
Aircraft Artificer Group

1. The Air Force member of ISTC has made the following comments concerning the RCEME air trade specifications:

a. Airplane Technician

- (1) It is appreciated that the tradesman is only qualified on light aircraft, therefore the tasks and duties are within the capabilities of a single tradesman. It is questioned however that a tradesman with only six months experience as a vehicle mechanic can on completion of an aircraft repair course be fully qualified to perform the duties of a group 2 tradesman. It would appear that in the interests of flight safety there should be a minimum of six months or preferably one year practical experience before the tradesman can be considered proficient and therefore qualified to perform group 2 duties. At least another full year of practical experience is considered minimum for group 3.
- (2) A number of group 2 duties such as 4.3.5, 4.3.12, 4.3.13, 4.3.15 are considered to be areas of considerable responsibility. While such tasks as 4.3.18, 4.3.23 and 4.3.27 are well detailed in Engineering Orders, a tradesman needs considerable practice and practical experience in order to meet the standards required. It is therefore suggested that either a number of these items be transferred to the group 3 level or the time extended to qualify.

b. Helicopter Technician

The same general comments as those outlined above except that as considerable more equipment of greater complexity is involved it is felt that one year of practical experience is the absolute minimum required to proficiently perform all the duties listed for a group 2 tradesman.

c. Aircraft Artificer

The RCAF has little comment to offer on this specification. However again in the interests of Flight Safety it would appear that this tradesman is responsible to the OC of an RCEME workshop. No indication is given as to whether the OC of this school has ever been trained or is qualified to make a decision on aircraft maintenance, repair or modification procedures. Clarification is therefore requested as to who is providing the supervision under para 5.1 and to what extent this supervision extends.

2. This directorate agrees with their comments concerning the practical experience required before being considered qualified for groups 2 and 3.

3. It is recommended that paragraph 7 of the specifications for Airplane Technician and Helicopter Technician be amended and the following substituted:

a. Airplane Technician
Helicopter Technician

(1) delete present 7.1.2 and substitute:

"7.1.2 Qualification may then be obtained by passing a trade test authorized by Army Headquarters after having taken a minimum of 12 months in-job training on airplane/helicopter (applicable word to be used) engine and airframe repairs with the Canadian Army, Royal Canadian Navy, Royal Canadian Air Force or Department of Transport.

(2) delete from para 7.2.2 line 3 "6" and substitute "12".

4. This directorate does not propose any re-arrangement of the knowledges and skills between group 2 and 3 as suggested by the RCAF.

5. It is presumed that the OC, the RCNMS workshop servicing and repairing aircraft will be a Pilot and have completed suitable courses in aircraft maintenance.

6. May your comments be received please.

J. Hutchins
(J. Hutchins)
Colonel
Director of Organization

MEMORANDUM

HQ 3666-1/10 (ME 1)

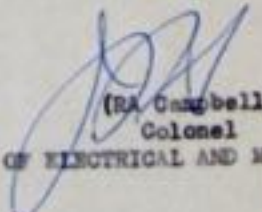
In reply to HQ 3666-1/10 (org2B)
Dated 17 Feb 60

29 Mar 60

D Org

RCEME Trade Specifications
Aircraft Repair Trades

1. Reference telephone conversation Capt. Malloch-O'Neill
21 Mar 60.
2. Enclosed are the approved trade specifications for Aircraft Artificer, Airplane Technician and Helicopter Technician, which have been checked for accuracy of references. It is requested that the effective date for these Aircraft repair trade specifications be 1 Apr 60.
3. The responsibility for taking over the maintenance of army rotary and fixed-wing aircraft is planned for mid summer 60. HQ 6001-Aircraft/LL9 (DL/AW) dated 22 Feb 60 refers. Because of the 12 month time limit for in-job training shown for normal upgrading (para 7.2.2) between group 2 and group 3, it is requested that "Implementing Instructions for each trade be amended. The suggested rewording for the applicable paragraph 10 is as follows:
 - a. Vehicle Mechanics Wheeled or Vehicle Mechanics Tracked in RCEME who have taken training or are undergoing training as (helicopter) (airplane) repairmen, prior to or at the date of this specification will be advised by Army Headquarters whether they are considered qualified as (Helicopter Technicians Group 2 or 3) (Airplane Technicians Group 2 or 3) and the effective date of qualification.
 - b. Para 7 of this specification requires that Aircraft Artificers be qualified as both Helicopter Technicians Group 3 and Airplane Technician Group 3. Therefore Vehicle Artificers who have taken training or are undergoing training as aircraft repairmen prior to or at the date of this specification, will be advised by Army Headquarters whether they are considered qualified as Helicopter Technicians Group 3 or Airplane Technicians Group 3 or in the case of both, as Aircraft Artificers Group 4 and the effective date of qualification.


(RA Campbell)
Colonel

DIRECTOR OF ELECTRICAL AND MECHANICAL ENGINEERING

JOM/4-5083/pb

Enclosure

MEMORANDUM

HQ 3610-2/10 (WE 1)

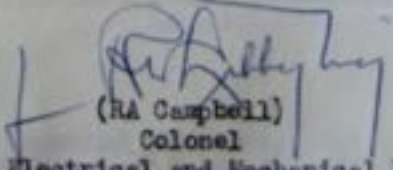
~~HQ 3610-3/10 (WE 1)~~

6 Feb 61

D Pers (RCEME)

Trade Qualifications
RCEME Aircraft Repair Tradesmen

1. Reference is made to paragraph 10, Implementing Instructions of the trade specifications for Airplane Technician, Helicopter Technician and Aircraft Artificer.
2. Since RCEME will take over the responsibility for army aircraft repairs in March 1961, it is recommended that all RCEME Vehicle Mechanics Tracked or Wheeled and Vehicle Artificers who completed in-job training or were undergoing in-job training with the RCN or RCAF prior to 1 Apr 60 and received RCN or RCAF qualifications by passing trade tests, should now be considered for army aircraft trades qualification.
3. Although remustering cannot take place at this time, aircraft repair tradesmen should now be qualified in the new Army trades and so be ready to fill vacancies in the new aircraft repair establishments when they become effective.
4. Tradesmen who were undergoing training with RCN or RCAF as of 1 Apr 60 must pass the RCN or RCAF trade tests before they can be considered for their approved Army qualification.
5. Tradesmen who did not start in-job training until after 1 Apr 60 will have to qualify in accordance with paragraph 7 of their appropriate trade specification.
6. Please prepare lists of personnel who should be granted either airplane technician group 2 or 3 or helicopter technician group 2 or 3 qualifications, on the basis of having qualified group 2 or 3 in equivalent RCN or RCAF trades.
7. These lists will be verified by DEWE and passed to DMT for approval.


(RA Campbell)
Colonel

Director of Electrical and Mechanical Engineering

VOL 13

DEPARTMENT OF NATIONAL DEFENCE

.ARMY TRADES COMMITTEE

USE INSIDE COVER FOR CROSS REFERENCES

[illegible]

"B.F." - DO NOT HOLD THIS FILE WHEN LAPSES
IN ACTION MAY EXCEED 48 WORKING HOURS

1200-T3

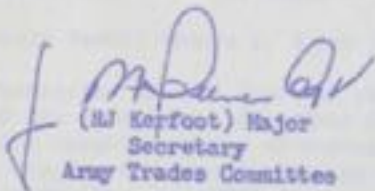
CANADIAN FORCES HEADQUARTERS

HQ 1200-T3 (MT (IT) 2A1)

OTTAWA 4, Ont. 17 Sep 64

Army Trades Committee - Meeting 25 Sep 64
Agenda

1. Reference memo of even file dated 16 Sep 64 concerning the agenda for a meeting of the Army Trades Committee on 25 Sep 64.
2. Herewith supporting DATA for Item 3, Trade Specifications for RCNRE Aircraft Repair Trades.
3. One of the questions in this submission deals with trade coding. D Rec is requested to have a representative in attendance.


(HJ Kerfoot) Major
Secretary
Army Trades Committee

Distribution:

DMT
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DQOP
DUCM
DME
MT 2A

SUPPORTING DATA

FOR

ARMY TRADES COMMITTEE

ON

AIRCRAFT AND AIR TRADES

1. Attached are draft trade specifications for the following proposed trades:

- a. Aircraft Instrument-Electrical Technician (Ac IE Techn) Groups 1, 2 and 3.
- b. Master Aircraft Instrument-Electrical Technician (Mr Ac IE Techn) Group 4.
- c. Aircraft Technician (Ac Techn) Groups 1, 2 and 3.
- d. Master Aircraft Technician (Mr Ac Techn) Group 4.
- e. Metals Technician (Metals Techn) Groups 1, 2 and 3.

2. The Master Aircraft Technician Group 4 (para 1d above) is a revision of the authorized trade of the same name. The other four are proposed trades created by combining existing trades or because of the introduction of new equipment. All are based on field study by the Job Analysis Section of OPM and detailed discussion with DPMR.

3. At DPMR's request, all the specifications have already been approved as to skill and knowledge content by DPT so that course syllabi and trade tests could be prepared.

4. At the request of DPMR the specifications are presented in a different form to that now in use for army trades. The form somewhat resembles that approved in 1963 for the Army specialties but with certain differences.

5. The purpose of this submission is twofold:

- a. To seek Army Trades Committee direction on the use of the DCEME sponsored form.
- b. To seek Army Trades Committee approval of the detail of duties, skill and knowledge, method of qualification, etc, described in the specifications attached, and agreement on the group pay levels to be recommended to JMC Sub-Committee on Armed Forces Pay and Allowances.

6. Some implications of the adoption of the new form are set out in Appx 1 attached. The trade themselves are discussed in some detail in Appx 2.

7. It is requested that the OSD rep approve the abbreviations shown in para 1 of this paper and, if further names are required, the following abbreviations:

Cessna and Pousad	-	C&P
Voyageur	-	V
Ground	-	Gnd
Air	-	Air

8. The DPMK representative is asked to provide the meeting with the details of any financial implications as the result of the introduction of each of the trades being proposed such as:

- a. Increase in number of tradesmen.
- b. Cost of additional instructors.
- c. Cost of any additional training facilities, equipment or reference material.
- d. Any other related costs.
- e. Any demonstrable savings.

9. Approval of these new trades will constitute authority to designate as obsolescent (and in due course, obsolete) the following trades:

- a. Airplane Technician.
- b. Helicopter Technician.
- c. Body Repairman.
- d. Welder (in RCNTE but not RCE).

UTILITIES OF

ADOPTION OF RCME PROPOSED FOR.

Reference - Proposed Specification A-08 dated 24 Aug 64.

1. Presents in one specification, rather than three separate specifications, the duties, skill and knowledge of all tradesmen beneath the Master level employed on aircraft instrument and electrical repair.
2. Permits some saving of printing costs since it avoids repetition of sections common to each "sub-division of the trade".
3. Since skills and knowledge or references common to more than one "sub-division of the trade" appear only once, reduces the volume of amendments.
4. By reason of the coding assigned to specific qualification attained at the third skill level (801 for CAM and 802 for V), permits machine selection of pers for training or employment.
5. Permits DME the flexibility they want (now enjoyed by the fighting arms) to employ pers in establishment positions for another "sub-division of the trade" without having to seek D Pers authority for them to continue to draw group pay.
6. Represents a major departure from current specification form (except for the variation permitted the fighting arms in 1963).
7. Represents a departure from the current system of machine coding of trades in that the code numbers 801 and 802 (and to be listed in D Rec trade coding guide) are not codes for trades but codes for "sub-divisions of a trade".
8. Permits the listing, in CAMTS Annex "A" (authorized trades), of the trade name "Aircraft Instrument-Electrical Technician" (which is no indication of the specific group 3 skills and knowledge) but precludes the listing of the more specific names of the "sub-divisions of the trade".
9. Establishes the precedent for similar treatment of other RCME trades now individually authorized.
10. Opens the door to other corps to seek similar revision.
11. Could present those responsible for combining the policies and practices of the three services with another variable, possibly a further obstacle to a satisfactory change-over.

INTRODUCTION OF TRADES

1. Aircraft Instrument-Electrical Technician - This is a new trade combining the knowledge and skills required of personnel employed in the servicing and repair of all instrument and electrical equipment and their systems in Army owned aircraft. Job Analysis by the Job Analysis Section D Man and discussion with DTEE revealed that the knowledge and skills required by those tradesmen, particularly with the early introduction into the Army of the Voyager helicopter, was sufficiently different from the knowledge and skills possessed by men in the existing trades of Instrument Technician and Electrical Technician to warrant the introduction of the new trade (such a trade had been proposed to DTEE when the Army took over the repair of Army owned aircraft several years ago but DTEE requested at that time that such a change be deferred pending user experience and further job analysis). Tradesmen will qualify for group 1 and 2 trades pay by attending a course for group 1 and in-job-training and trade test for group 2. They will be capable of servicing and repairing minor faults on all instrument and electrical equipment in all aircraft. At the group 3 level they will qualify by course and will specialize in the repair of all instrument and electrical equipment and systems either on the Cessna airplane and Puma helicopter or on the Voyager helicopter. Results of job evaluation indicate that the requirements at either of the group 3 skill levels warrants the receipt of pay level 32. Details of the remustering action and further training required by Instrument Technicians or Electrical Technicians presently employed on the repair of aircraft instruments and electrical systems are contained in paragraph 10, Implementing Instructions, of the specification.
2. Master Aircraft Instrument-Electrical Technician Group 1 - This is a new trade. The reasons for its proposed introduction are similar to those contained in paragraph 1 above. It provides a trade for Master Electrical Technicians and Master Instrument Technicians employed on the repair of complex electrical and instrument equipment and systems in all army aircraft. The trade has been evaluated and warrants pay level 4A. The details of the training required prior to remustering of Master Instrument Technicians and Master Electrical Technicians now so employed are contained in paragraph 10, Implementing Instructions, of the specification.
3. Aircraft Technician - This is a new trade combining the existing trades of Airplane Technician Groups 1, 2 and 3 and Helicopter Technician Groups 1, 2 and 3. This proposal is a result of job analysis by D Man, user experience by DTEE and the pending introduction of the Voyager helicopter into the Army. The tradesmen will receive a course at Group 1 on the basic knowledge and skills required for all aircraft used by the Army. At the group 2 and 3 levels he will specialize in the repair of the Cessna airplane and Puma helicopter or the Voyager helicopter. Qualification for group 2 will be by in-job-training and trade test and for group 3 by course. The trade has been evaluated and the results warrant the granting of pay level 32 either as an Aircraft Technician (Cessna and Puma) Group 3 or an Aircraft Technician (Voyager) Group 3. The details of remustering action and retraining required of Airplane Technicians and Helicopter Technicians are contained in paragraph 10, Implementing Instructions, of the specification.
4. Master Aircraft Technician Group 4 - This specification replaces that for Master Aircraft Technician Group 4 dated 1 Apr 60. The major change in the specification is the addition of the knowledge and skills required to diagnose and repair complex faults in the new Voyager helicopter in addition to the Puma helicopter and Cessna airplane previously required of the tradesman. The man management functions and the rank prerequisite have been deleted. The trade has been evaluated and continues to warrant pay level 4A. The details of the training required of tradesmen qualified under the old specification dated 1 Apr 60 are contained in paragraph 10, Implementing Instructions, of the specification.

5. Metals Technician - This new trade combines the existing trades of Welder Groups 1, 2 and 3 (dated Jan 62) and Body Repairman Groups 2 and 3 (dated Sep 63). Job Analysis also revealed that those tradesmen employed on the structural repair of aircraft required special knowledge and skills to satisfactorily perform their duties. Accordingly, at the group three level, the tradesmen after attending a common course at group 3 will continue on a specialized course to qualify him to repair either aircraft or ground equipments. The trade has been evaluated and the results warrant the granting of pay level 3Y either as a Metals Technician (Ground) Group 3 or a Metals Technician (Air) Group 3. The details of the remustering action and training required of Welders and Body Repairman are contained in paragraph 10 Implementing Instructions, of the specification.

30 Sep 64

ARMY TRADES COMMITTEE

MINUTES OF THE 183RD MEETING HELD IN
ROOM 3521 "A" BUILDING
AT 1400 HRS ON 25 SEP 64

PRESENT

Colonel	WA	Milroy	DMT (Chairman)
Maj	JW	Ritchie	DSD
Maj	JJ	Pitagibbon	D Org
Lt Col	DS	McLennan	DQOP
Lt Col	DJ	Harden	D&P
Capt	PF	Heenan	DUT (A/Secretary)

IN ATTENDANCE

Lt Col	AH	McLean	DISE
Maj	WR	Shaw	D&E
Capt	JM	Scott	D Adm
Capt	NC	Malloch	D Man
Capt	WH	Higcombe	D Rec

ITEM 1

1. The minutes of the 182nd Meeting were approved.

ACTION BYITEM 2

ARMY TRADE SPECIFICATIONS
BANDMASTER GROUP 4

2. This item was introduced by Capt Malloch. After discussion the committee:

- a. Agreed to the draft specification.

D Org

ITEM 3

ARMY TRADE SPECIFICATIONS
AIRCRAFT REPAIR TRADES (SCHE)

3. This item was introduced by Lt Col McLean. After discussion the committee:

- a. Approved of the detail of duties, skill and knowledge and method of qualification described in the specification and agreed on the group pay levels to be recommended to DMC Sub-Committee on Armed Forces Pay and Allowances.

DMT
D Org

- b. Agreed to designating as obsolescent the following trades:

D Org

- (1) Airplane Technician
- (2) Helicopter Technician
- (3) Body Repairman
- (4) Welder (SCHE only not SCE)

ACTION BY

- c. Noted there were NO financial implications.
- d. Records that the Committee is in favour of the RCNHS proposal to group the skills into one trade.
- e. Recommend the proposed form be adopted by the successor to the ATC under integration.

ITEM A

CONTINUATION OF THE ARMY TRADES COMMITTEE

4. The Chairman introduced the question of the continuation of the Army Trades Committee. After discussion the Committee:

- a. Recommended direction be sought as to the future of the Army Trades Committee.
- b. Suggested that if the Committee is to continue it should be formed as a sub-committee (Army) to an integrated services trades committee.
- c. Recommended that until direction is received, the Committee continue to function in its present form.
- d. Recommended new terms of reference be drafted for the interim period.

DNT

DNT

DNT

for M. J. Herfoot
(R.J. Herfoot)
Major
Secretary
Army Trades Committee

Issued 1 Oct 64

Distribution:

D.T
DSD
D Org
DQOP
DAP
DAGE
D Man

Aircraft Artificer
Group 4
1959

AIRCRAFT ARTIFICER GROUP 4

1. CLASSIFICATION

Full Title	Abbreviation	Code Number
1.1 Aircraft Artificer Group 4	<i>ac art</i> Sp 4	1154

2. SUMMARY

2.1 Tests, inspects and supervises permissive repairs to Army light fixed-wing and rotary wing aircraft, excluding their instrument and electrical systems.

3. DUTIES AND TASKS

- 3.1 Plans section work loads and keeps section accounting documents.
- 3.2 Co-ordinates the engine and airframe work with other sections of the workshop.
- 3.3 Examines aero-engines and airframes and their records to determine what repairs or replacements are required.
- 3.4 Supervises the testing, adjusting and repairing of aircraft engines and airframes and their components.
- 3.5 Carries out specification tests and final inspections on and certifies the airworthiness of aero-engines and airframes.
- 3.6 Prepares reports on recurring breakdowns and equipment failures and suggests remedial action.
- 3.7 Accounts for tools and equipment on charge to his section and orders materials and spare parts.
- 3.8 Prepares inspection and technical reports, and checks maintenance and repair records and log books.
- 3.9 Directs the recovery of crashed aircraft.
- 3.10 Instructs junior tradesmen in the performance of their duties.

4. TRAINING, EXPERIENCE, SKILLS AND KNOWLEDGE REQUIRED

- 4.1 The tradesman requires the skills and knowledge described in this specification. The degrees of skill and knowledge will be determined from the references listed. To qualify, he must reach the level shown but not any higher level.
- 4.2 Normally, the reference material shown below will be used for instructional purposes but other suitable material may be substituted when necessary.

ABO	- Applicable RCAF Engineering Order.
CAMT 1-38	- Canadian Army Manual of Staff Procedures, Volume 1, Military Writing, 1958.
CAO	- Canadian Army Orders.
EME	- Canadian Army Electrical and Mechanical Engineering Manual.
EO	- RCAF Engineering Orders.

- MSP - Machine Shop Theory and Practice, Second Edition,
 by Wegener and Arthur.
 MTS - Canadian Army Manual of Trades and Specialties.
 RSP - RCNRM School Precis.
 SN - Safety Manual for Government Departments and Crown
 Agencies - Department of Labor.
 7-TM 9-237 - US Department of the Army, Technical Manual, TM 9-237 -
 Welding Theory and Application, Oct 59.
 TO - USAF Technical Orders.

GROUP 4

- 4.3 In addition to the prerequisites shown in paragraph 7.1.1 of this specification, and to perform his duties satisfactorily, the group 4 tradesman must:

References

- 4.3.1 Know:
- .1 The classifications of ferrous and non-ferrous metals. TM 9-237: *pages 12 to 19,*
 - .2 The methods of testing metals for hardness. TO: 1-1A-9 and RSP: 2-1-8. TO: 1-1A-9.
 - .3 Chemical composition and mechanical properties of aircraft metals; glossary of terms. TO: 1-1A-9 & 1-1A-1A and TM 9-237 *pages 24 to 29,*
 - .4 Aircraft structural materials and their methods of identification. TM 9-237: *pages 32 to 47,*
- 4.3.2 Know:
- .1 Types of welded joints and methods of edge preparation. TM 9-237: *pages 24 to 35, 54 to 64, 124 to 129 & Appx III.*
 - .2 The advantages and disadvantages of oxy-acetylene and arc welding. MSP: pp 36 to 56, 72 to 121 & 122 to 154.
- 4.3.3 Know the capabilities of machine tools normally found in Army workshops. AZO: sec 45-10 series.
- 4.3.4 Be able to direct the preparation and servicing of Army aircraft for arctic, tropical, desert and amphibious operation. TO: 2R-0335-2, 2R-0-335-3, 2R-047D-3 & 2R-R985-3 and EO: 00-50-7.
- 4.3.5 Be able to carry out specification tests and final inspections on Army aircraft engines and airframes. EO: 00-50-9.
- 4.3.6 Be able to direct the recovery of crashed aircraft. EO: 15-1-3A & 15-1-3E.
- 4.3.7 Know the regulations governing the replacing of time-expired components. EME: Stat Ops 8010 & Stat Ops 8011.
- 4.3.8 Know the responsibilities of RCNRM scales sections and know how to prepare spare parts usage returns. EME: Stat Ops H651, EME: Stat Ops H601, EME: Stat Ops H441, EME: Stat Ops H909 and CANT 1-36: chaps 1 to 3 and RSP: 4-9-8, 4-9-9, 4-9-10 & 4-9-13.
- 4.3.9 Be able to prepare:
- .1 Abnormal condition reports.
 - .2 Equipment failure reports.
 - .3 Provisional condemnation certificates.
 - .4 Technical briefs and reports.

References

- 4.3.10 Be able to interpret the EME Manual and technical publications for repair procedure, details of modifications, and the identification and ordering of parts.
- 4.3.11 Be able to estimate the cost of labor and parts required to repair any equipment of the trade.
- 4.3.12 Know:
- .1 The methods of preservation for storage and for shipment.
 - .2 The procedures for backloading through RCOG channels.
 - .3 The methods used in RCENE workshops for cleaning and decontaminating equipment.
 - .4 The requirements of a workshop safety program.
 - .5 The repair policy and division of responsibility for servicing and repairing equipments.
 - .6 The scope of other RCENE trades.
 - .7 The policy governing the carrying out of modifications.
 - .8 Accounting procedures for tools and equipment on charge to a workshop section.
- 4.3.13 Know the responsibilities of a RCENE Inspection Team and be able to carry out periodic inspections of aircraft.
- 4.3.14 Know:
- .1 The principles of organization and the functions of management.
 - .2 What RCENE mandates and standing operating procedures are and how they are applied.
 - .3 The procedures for maintaining good personnel relations and the effective utilization of personnel.
 - .4 The principles of leadership and the techniques of applying them.
 - .5 The methods of improving the conditions of work and making the best use of manpower, material and workshop equipment available.
 - .6 The principles of job instruction and their application to the in-job training of junior tradesmen.

EME: Gen A003 & Stat Ops S012 and CAO: nos. 225-9 & 226-35.

CAO: 93-1 and EME: Stat Ops H045.

EME: Stat Ops H752 and TO: 2R-1-11.
EMR: Stat Ops E701.

EME: Stat Ops P200.

EME: Stat Ops V061 and 3E.
EME: Gen B200, Pd Ops C100 paras 2 & 3, Stat Ops B112 to B114 & H042 and CAO: 93-2.
MTS: appx F para 3 of each RCENE trade specification.
EME: Stat Ops H602, H503 & H504.
EME: Stat Ops J100 appx A serials 6 to 11.

EME: Stat Ops H101.

RSP: 4-4-1 to 4-4-1/F, & 4-4-2.
RSP: 4-4-17.

RSP: C-5-2 & 4-4-5 to 4-4-5/8.

RSP: 4-4-4.

RSP: C-5-3 & C-5-5.

RSP: C-5-4, 4-4-7, 4-4-8 & 4-4-10.

5. RESPONSIBILITY

- 5.1 An Aircraft Artificer Group 4 is responsible, under minimum supervision, for the work performed on aero-engines and airframes in the aircraft repair section of a RCENE workshop. He is responsible for certifying the airworthiness of the repaired aero-engines and airframes and for training junior tradesmen.

6. WORKING CONDITIONS

6.1 Physical

- 6.1.1 Duties are normally performed under cover. He may occasionally work outdoors.

6.2 Stresses

- 6.2.1 Mental stress is above average when inspecting aero-engines and airframes prior to certification for airworthiness.
- 6.2.2 These tradesmen are subject to additional stress from noise and vibration.

6.3 Occupational Hazards

- 6.3.1 The normal hazards are cuts, bruises, burns. Tradesmen are also exposed to more serious injury from moving aircraft and revolving propellers.
- 6.3.2 In addition hazards of flight are encountered when tradesmen are required to take part in test flights.

7. METHODS OF QUALIFICATION

7.1 Qualification for Group 4

- 7.1.1 To qualify as an Aircraft Artificer Group 4, the candidate must:

.1 Either:

- .1 Be qualified as an Airplane Technician Group 3 and have passed the group 3 trade test for Helicopter Technician; or
- .2 Be qualified as an Helicopter Technician Group 3 and have passed the group 3 trade test for Airplane Technician; and

- .2 Have passed a RCENE senior non-commissioned officer's course; and

- .3 Have successfully completed an assessment which will test his proficiency as an Airplane Technician Group 3 and a helicopter Technician Group 3 and assess his ability to absorb instruction at the levels indicated in paragraph 4.3 of this specification. ~~Two thirds of this assessment may be carried out at Commands and marked by RCENE School.~~

This is not so. Pls delete

- 7.1.2 Qualification may then be obtained by passing a course authorized by Army Headquarters.

- 7.1.3 The scope of the course will include the requirements of paragraph 4.3 of this specification.

8. CAREER POSSIBILITIES

8.1 Trade Progression

- 8.1.1 This trade does not progress to any other trade.

9. RELATED OCCUPATIONS

- 9.1 Navy - Plane Technician
Air Artificer
- 9.2 Air Force - Aircraft Maintenance Superintendent

Dictionary of
Occupational Titles
Code Number

- 9.3 Civilian - Aircraft Engine Mechanic - Foreman
(air trans) 5-80.130
Airplane Inspector (air trans) 5-80.910

10. IMPLEMENTING INSTRUCTIONS

10.1 This is one of the new trades for personnel employed on aircraft servicing and repair.

10.2 Vehicle Artificers who ~~prior to the date of this specification~~ *have taken training, or are undergoing training* have taken training as aircraft repairmen will be advised by Army Headquarters whether they are considered qualified as Aircraft Artificers Group 4 and the effective date of group pay.

or at the date of this specification

Helicopter Technician or Airplane Technician or in the case of both as Aircraft Artificers Group 4

Effective Date: 1 Apr 60

Distribution Lists:

Airplane Technician
Groups 2 & 3
1959

AIRPLANE TECHNICIAN GROUPS 2 AND 3

1. CLASSIFICATION

	Full Title	Abbreviation	Code Number
1.1	Airplane Technician Group 2	<i>Air Techn</i> -p 2	<i>114</i> 2
1.2	Airplane Technician Group 3	 Gp 3	<i>114</i> 3

2. SUMMARY

- 2.1 Services, inspects, tests, adjusts and carries out permissive repairs to light fixed-wing aircraft engines and airframes.

3. DUTIES AND TASKS

- 3.1 Assists in the moving and securing of airplanes.
- 3.2 Cleans and polishes airplanes.
- 3.3 Refuels aircraft and changes or replenishes oil, ensuring that correct fuel is used and safety precautions are observed.
- 3.4 Checks the security of various mountings and fastenings and the serviceability of lubrication, fuel, ignition and cooling systems and engine controls.
- 3.5 Performs routine pre-flight duties on airplanes and guides the pilot by using recognized hand signals.
- 3.6 Starts engine and performs test "run-ups".
- 3.7 Performs primary and periodic inspections and diagnoses and corrects faults.
- 3.8 Carries out modifications, adjustments and permissive repairs to light fixed-wing aircraft engines.
- 3.9 Removes aero engines and airframe components and unpacks, cleans, assembles and installs their replacements.
- 3.10 Preserves and packs engines and airframe components for storage or shipment.
- 3.11 Checks the operation of the engine and of airframe components during test flights.
- 3.12 Removes, checks and installs propellers.
- 3.13 Adjusts and makes permissive repairs to airframe components and assemblies.
- 3.14 Services aircraft maintenance equipment such as compressors, towing equipment, cranes and hydraulic jacks.
- 3.15 Makes entries in log books and maintenance schedules showing the work done, and certifies the serviceability of the engine and airframe.
- 3.16 Uses technical publications for information on adjustments, maintenance and repairs.
- 3.17 Instructs junior tradesmen in the performance of their duties.

4. TRAINING, EXPERIENCE, SKILLS AND KNOWLEDGE REQUIRED

4.1 The tradesman requires the skills and knowledge described in this specification. The degrees of skill and knowledge will be determined from the references listed for each trade group. To qualify in a particular group, he must reach the level shown but not any higher level.

4.2 Normally, the reference material shown below will be used for instructional purposes but other suitable material may be substituted when necessary.

AEO	-	Applicable RCAF Engineering Order.
AEM	-	Applicable equipment manual.
AM	-	The Aircraft Magneto by Scintilla.
AMR	-	Aircraft Maintenance and Repair by Northrup Aeronautical Institute, publisher McGraw Hill.
BIAH	-	Bendix Ignition Analyzer Handbook.
ED	-	Engineering Drawing, 8th Edition, by TE French and CJ Vierck.
EME	-	Canadian Army Electrical and Mechanical Engineering Manual.
EO	-	RCAF Engineering Orders.
PM	-	Principles of Magnaflux by Donas and Betz.
RSP	-	RCEME School Precise.
TM 1-1-1A-8	-	US Department of the Army Technical Manual TM 1-1-1A-8 Aircraft Structural Hardware, 6 Dec 54.
TM 1-1L-19A-2	-	US Department of the Army Technical Manual, TM 1-1L-19A-2 Maintenance Instructions for L-19A Series Aircraft, 14 Feb 57.
TM 1-1L-19A-3	-	US Department of the Army Technical Manual, TM 1-1L-19A-3, Structural Repair Instructions; L-19A Series Aircraft, 17 Jan 55.
TM 1-1L-19A-5	-	US Department of the Army Technical Manual, TM 1-1L-19A-5 Basic Weight Checklist and Loading Data; L-19A Aircraft, 26 Mar 57, Changes 1.
TM 1-250	-	US Department of the Army Technical Manual TM 1-250 - Principles of Fixed-Wing Flight.
TO	-	USAF Technical Orders.

GROUP 2

4.3 In addition to the prerequisites shown in paragraph 7.1.1 of this specification, and to perform his duties satisfactorily, the group 2 tradesman must:

References

4.3.1	Be able to guide aircraft using authorized hand signals.	EO: 00-50-19.
4.3.2	Be able to tow and secure light fixed-wing airplanes.	EO: 00-50-19 & 00-60-1/21 & sec 05-2 group.
4.3.3	Be able to service light fixed-wing airplanes by: .1 Cleaning. .2 Refueling. .3 Lubricating.	EO: 50-10A-2A. EO: 45-5A-2, 45-5A-2C, 45-5A-2D, 00-80-4/6 & 00-80-4/21. EO: 45-10A-2 & 45-10B-5 and AEM.
4.3.4	Be able to carry out routine pre-flight duties.	EO: 05-125A-7.

References

- 4.3.5 Know the instruction governing engine run-ups and be able to start airplane engines with or without external power supply units. EO: 00-50-16 & sec 65C-5 series & 05-125A-1.
- 4.3.6 Know the principles of fixed-wing flight. TM 1-250: chaps 1 & 2.
- 4.3.7 Know:
- .1 The basic principles of hydraulics. TO: 42B2-1-3.
 - .2 Cleaning agents used in hydraulic systems. TO: 42B2-1-3.
 - .3 Types of seals used in hydraulic systems. TO: 42B2-1-3.
- 4.3.8 Be able to bend, replace and repair rigid and flexible tubing. TM 1-1-1A-8.
- 4.3.9 Know the following safety precautions or reporting procedures:
- .1 General safety precautions. RSP: 2-1-1 and EO: 00-80-4. EO: 00-80-3.
 - .2 Reporting procedures for aircraft maintenance errors. EO: 00-80-2.
 - .3 Reporting procedures for ground accidents to aircraft. EO: 00-80-4/2.
 - .4 Cleanliness. EO: 00-80-4/3.
 - .5 Fire hazards. EO: 00-80-4/10.
 - .6 Propellers. EO: 00-80-4/14.
 - .7 The use of lifting tackle. EO: 00-80-4/21.
 - .8 Handling of petroleum products. EO: 00-80-4/27.
 - .9 Jacking of aircraft. EO: 00-80-4/29.
 - .10 The use of soldering irons on aircraft.
- 4.3.10 Know preservation procedures for shipping or storing aircraft parts. EO: 15-10-9, 05-1-9, 50-15A-2A & 50-15A-2B.
- 4.3.11 Know the function, construction and the principles of operation of the following light fixed-wing aircraft assemblies and systems:
- .1 Airframes. EO: 10A-45B-2, 05-125A-2 and TO: 1L-19A-2. EO: 10A-45B-2 and TO: 1L-19A-2. EO: 10A-45B-2. AM and EO: 15-5A-2A, 15-5C-2, 15-5D, 15-5BB & 15-5BBD. AEO: sec 15-25 series. AEO: secs 15-10, 15-15, 15-20 & 15-75 series. AEO: 10A-45B-2. AEO: sec 15-30 series. AEO: secs 15-35, 15-45, 15-50 & 15-60 series. TM 1-1L-19A-2. AEO: sec 15-85 series.
 - .2 Engines.
 - .3 Flight controls.
 - .4 Ignition systems.
 - .5 Oil systems.
 - .6 Fuel systems.
 - .7 Cooling systems.
 - .8 Propellers.
 - .9 Landing gear.
 - .10 Hydraulic brake systems.
 - .11 Heating systems.
- 4.3.12 Be able to carry out primary and periodic inspections of airplanes. EO: 00-50-7 & 05-125A-7 & 05-125A-7A.

References

- 4.3.13 Know the type of equipment and special tools and procedures used in removing engines. EO: 05-125A-3, 05-1-3 & 10A-45B-3.
- 4.3.14 Know the purpose and location of:
 .1 Light fixed-wing aircraft instruments.
 .2 Electrical equipment. EO: 20-1-2G and TO: 5-1-8.
 EO: 05-125A-3 & 05-12AQ and TO: 1L-19A-2 & 1-1A-8 and TM 1-1-1A-8.
- 4.3.15 Be able to maintain the necessary records pertaining to weight and balance control of the airplane. EO: 05-1-8 and TM 1-1L-19A-5 and TO: 1-1B-50.
- 4.3.16 Know the types, characteristics, and uses of plastics in aircraft construction; their distinguishing tests and precautions for handling. TO: 1-1A-12.
- 4.3.17 Be able to clean, cut and cement plastics. TO: 1-1A-12.
- 4.3.18 Be able to do hand and pneumatic rivetting. TO: 1-1A-1 & 1-1A-8 and EO: 70-10C & 75-50-5A.
- 4.3.19 Know the types of hardware and structural materials used in airplane airframes. TO: 1-1A-8, 1-1A-9 & 1-1A-1.
- 4.3.20 Be able to use and service ground-handling equipment. AEO: sec 65A.
- 4.3.21 Know the principles and uses of safety wiring and other devices for aircraft metal fastenings. EO: 05-1-2AQ and TO: 1-1A-8 and TM: 1-1-1A-8.
- 4.3.22 Be able to use RCAF engineering orders, maintenance manuals, manufacturers' service instructions and parts list. AEM and EO 05-125A-4.
 00-1-1.
- 4.3.23 Be able to make minor repairs to light fixed-wing airplane airframes. EO: 05-125A-3 and TO: 1L-19A-3 & 1L-19A-2 and TM 1-1L-19A-3.
- 4.3.24 Be able to maintain and repair airplane tires and tubes. EO: 110-5-2 & 110-5-3.
- 4.3.25 Be able to locate and rectify simple faults in:
 .1 Ignition systems.
 .2 Fuel systems.
 .3 Cooling systems.
 .4 Engines.
 .5 Flight controls.
 .6 Landing gear and brakes. EO: 05-125A-3.
 EO: 10A-45B.
 EO: 15-10AAH-2.
 EO: 10A-45B.
 EO: 10A-45B-2.
 EO: 05-125A-3.
 EO: 05-125A-2A & 05-125A-2B.
- 4.3.26 Be able to apply preventive measures to control corrosion. EO: 05-1-2AH, 05-1-2AJ & 05-125A-3 and AMR.
- 4.3.27 Be able to make emergency skin repairs and touch-up paint up work. TO: 1-1A-11 & sec 50-5 series.

GROUP 3

4.4 In addition to the requirements for group 2, and to perform his duties satisfactorily, the group 3 tradesman must:

References

- | | |
|---|--|
| <p>4.4.1 Be able to use and care for:</p> <p>.1 Precision gauges and measuring devices.</p> <p>.2 Stone dressers.</p> | <p>RSP: 2-2-18/1 and
RSP: 2-1-4.
RSP: 2-4-1 and EO: 70-1A.</p> |
| <p>4.4.2 Be able to read mechanical drawings and prepare simple free hand working sketches.</p> | <p>ED: chaps 6, 7, 8 & 20.</p> |
| <p>4.4.3 Be able to preserve and pack aircraft parts.</p> | <p>EO: 10A-45B-9 &
10A-45B-9A & 15-5-9
& 05-1-9.</p> |
| <p>4.4.4 Be able to calculate basic weight and centre of gravity of light fixed-wing aircraft.</p> | <p>TO: 1-1B-50.</p> |
| <p>4.4.5 Be able to carry out non-destructive inspections of metal components.</p> | <p>PM.</p> |
| <p>4.4.6 Be able to inspect test and adjust engines and remove and replace complete cylinder assemblies.</p> | <p>EO: 10A-45B-2 & 10A-45B-3
and TO: 1L-19A-2.</p> |
| <p>4.4.7 Be able to remove and replace complete engine assemblies.</p> | <p>EO: 10A-45B-3 &
10 A-45B-9 and
TO: 1L-19A-2.</p> |
| <p>4.4.8 Be able to inspect, test, adjust and do permissive repairs to:</p> <p>.1 Ignition systems.</p> <p>.2 Fuel systems.</p> <p>.3 Oil systems.</p> <p>.4 Mechanical flight control systems.</p> <p>.5 Landing gear (including flotation gear and ski).</p> <p>.6 Brake systems.</p> <p>.7 Propellers.</p> <p>.8 Auxiliary heaters and heat exchangers.</p> <p>.9 Airframes.</p> | <p>BIAH and AM and EO:
10A-45B-2.
AEO: secs 15-10, 15-15,
15-20 & 15-72 series
and EO: 10A-45B-3.
AEO: sec 15-25 series.
EO: 05-125A-3.
EO: 05-125A-2A &
05-125A-2B.
TM: 1-1L-19A-2.
TM: 1-1L-19A-2.
AEO: sec 15-85 series.

EO: 05-1-3.</p> |
| <p>4.4.9 Be able to make appropriate entries in log books, maintenance schedules and other records concerning the maintenance, replacement of parts and repairs of airplane engines and airframes.</p> | <p>EO: 00-15-1, 00-15-9,
00-15-10 & 00-15-13.</p> |
| <p>4.4.10 Be able to complete his portion of section accounting documents.</p> | <p>EME: Stat Ops K011 para
16 & Figs 4, 5, 6, 8,
9 & 10 & K030 paras 1
to 11, Figs 1, 2 & 5
& Annexure 1.</p> |

5. RESPONSIBILITY

- 5.1 The Airplane Technician Group 2 is responsible, under general supervision, for servicing and performing periodic and primary inspections on light fixed-wing airplanes and repairing simple faults in aero-engines and airframes.
- 5.2 The group 3 tradesman is responsible, under minimum supervision for inspecting, testing, adjusting and doing permissive repairs to light fixed-wing airplanes and airframes. When accompanying an airplane away from its base for an extended period of time, he is responsible for its complete maintenance and servicing.

6. WORKING CONDITIONS

6.1 Physical

- 6.1.1 His duties require considerable effort and involve working in cramped and awkward places while servicing and repairing aircraft.
- 6.1.2 When working on aircraft in the open where they frequently are, duties involve exposure to the weather and extremes of temperature for varying periods.

6.2 Stresses

- 6.2.1 Mental stress is moderate due to the attention required to prevent equipment failures where serious consequences could result.
- 6.2.2 Tradesmen are subject to additional stress from noise and vibration.

6.3 Occupational Hazards

- 6.3.1 The normal hazards are cuts, bruises, burns and minor skin irritation. Tradesmen are also exposed to more serious injury from moving aircraft and revolving propellers.
- 6.3.2 In addition hazards of flight are encountered when these tradesmen are required to take part in test flights.

7. METHOD OF QUALIFICATION

7.1 Qualification for Group 2

- 7.1.1 To qualify as an Airplane Technician Group 2, the candidate must:

- 12
 - .1 Have qualified as a Vehicle Mechanic Wheeled Group 1 or as a Vehicle Mechanic Tracked Group 1 and have had at least ~~six~~ months experience in his trade; and
 - .2 Have passed an airplane repair course authorized by Army Headquarters.

- 7.1.2 Qualification may then be obtained by passing a trade test authorized by Army Headquarters.

- 7.1.3 The scope of the trade test will include the requirements of paragraph 4.3 of this specification.

7.2 Qualification for Group 3

- 7.2.1 To qualify as an Airplane Technician Group 3, the candidate must be qualified as an Airplane Technician Group 2.

12 — 7.2.2 Qualification may then be obtained by passing a trade test authorized by Army Headquarters after having taken a minimum of ~~six~~ months in-job training on airplane engine and airframe repairs with the Canadian Army, Royal Canadian Navy, Royal Canadian Air Force or the Department of Transport.

7.2.3 The scope of the trade test will include the requirements of paragraph 4.4 of this specification.

8. CAREER POSSIBILITIES

8.1 Trade Progression

8.1.1 An Airplane Technician Group 3 may progress to Aircraft Artificer Group 4.

9. RELATED OCCUPATIONS

9.1 Navy - Air Fitter
Air Rigger

9.2 Air Force - Aero-Engine Technician
Airframe Technician

Dictionary of Occupational Titles Code Number

9.3 Civilian - Airplane Mechanic (air trans)	5-80.100
Aircraft Mechanic (air trans)	5-80.120
Aircraft Engine Mechanic (air trans)	5-80.130

10. IMPLEMENTING INSTRUCTIONS

10.1 This is one of the new trades for personnel employed on aircraft servicing and repair.

10.2 Vehicle Mechanics Wheeled or Vehicle Mechanic Tracked in RCME who ~~prior to the date of this specification~~ ^{training} have taken training as airplane repairmen ^{Prior to or up to the date of this specification} will be advised by Army Headquarters whether they are considered qualified as Airplane Technicians Group 2 or Group 3 and the effective date ~~of group pay~~ ^{of qualification} ^{of are undergoing}.

Effective Date: 1 Apr 60

Distribution Lists:

Helicopter Technician
Groups 2 & 3
1962

Helicopter Technician Groups 2 and 3

Army Trade Specification H.06

1. General Information

1.1. Classification

Full Title	Abbreviation	Code Number
Helicopter Technician	Hel Techn	3832
	Group 2	
	Group 3	3833

1.2. Selection Requirements

- 1.2.1. Candidates must be members of the Corps of Royal Canadian Electrical and Mechanical Engineers or be willing to, and acceptable for, transfer to that corps.

1.3. Minimum “M” score and educational level: 130 and Grade 8.

1.4. PULHEMS Profile:

Battle	Support	Base
2222311	2233313	2233414

2. Summary

- 2.1. Services, inspects, tests, adjusts and carries out permissive repairs to helicopters excluding structural repairs.

3. Duties and Tasks

- 3.1. Assists in moving and securing helicopters.
- 3.2. Cleans and polishes helicopters.
- 3.3. Refuels helicopters and changes or replenishes oil, ensuring correct fuel is used and that safety precautions are observed.
- 3.4. Checks the security of various mountings and fastenings and the serviceability of lubrication, fuel, ignition and cooling systems and engine controls.
- 3.5. Assists in starting aircraft engines by operating external power supply units and performs “running” checks.
- 3.6. Performs between-flight inspections on helicopters and guides the pilot by using recognized hand signals.
- 3.7. Performs periodic inspections and diagnoses and corrects faults.
- 3.8. Carries out modifications, adjustments and permissive repairs to helicopter engines.
- 3.9. Removes aero-engines and airframe components and unpacks, cleans,

- assembles and installs their replacements.
- 3.10. Preserves and packs engines and airframe components for storage or shipment.
 - 3.11. Tests, removes, assembles and adjusts rotors and their components.
 - 3.12. Checks the operation of the engine and airframe components during test flights.
 - 3.13. Adjusts and makes permissive repairs to such items as flight control systems, landing gear, brake systems and heaters.
 - 3.14. Makes emergency repairs to skins and other structural components such as doors and plastic domes.
 - 3.15. Services aircraft maintenance equipment such as compressors, towing equipment, cranes and hydraulic jacks.
 - 3.16. Makes entries in log books and maintenance schedules showing the work done and certifies the serviceability of the engine and airframe.
 - 3.17. Uses technical publications for information on adjustments, maintenance and repairs.
 - 3.18. Instructs junior tradesmen in the performance of their duties.

4. Training, Experience, Skills and Knowledge Required

- 4.1. The tradesman requires the skills and knowledge described in this specification. The degrees of skill and knowledge will be determined from the references listed for each trade group. To qualify in a particular group, he must reach the level shown but not any higher level.

- 4.2. Only the publications shown below will be used as reference material.

AMR — Aircraft Maintenance and Repair by Northrup Aeronautical Institute
—publisher McGraw-Hill.

BIAH — Bendix Ignition Analyser Handbook—COC Cat No 7610-
21-102-2614.

ED — Engineering Drawing, 8th Edition by T. E. French and C. J. Vierck.

EME — Canadian Army Electrical and Mechanical Engineering Manual.

EO — RCAF Engineering Orders

MAG — The Aircraft Magneto by Scintilla.

PHY — Vitalized Physics, 4th Edition by R. H. Carleton.

PM — Principles of Magnaflux by Donas and Betz.

PRW — US Department of the Army, Technical Manual TM 1- 260,
Principles of Rotary Wing Flight, 24 Sep 57.

RSP — RCEME School Precis.

Group 2

- 4.3. In addition to the prerequisites in paragraph 7.1.1 of this specification, and to perform his duties satisfactorily, the group 2 tradesman must:

4.3.1	Be able to guide aircraft using authorized hand signals and tow and secure helicopters.	EO: 00-50-19 & 00-60-1 & 05-2 group.
4.3.2	Be able to service helicopters by:	
4.3.2.1	Cleaning.	EO: 50-10A-2A.
4.3.2.2	.2 Refuelling.	EO: 45-1-2, 45-5A-2, 45-5A-2C, 45-5A-2D, 00- 80-4/6 & 00-80-4/21.
4.3.2.3	.3 Lubricating.	EO: 05-2 group.
4.3.3	Know the instruction governing engine run-ups and be able to operate external power supply units to start helicopter engines.	EO: 00-50-16, 65C series & 15-95 series.
4.3.4	Know the principles of rotarywing flight.	PRW: chaps 1 & 2.
4.3.5	Be able to maintain the necessary records pertaining to weight and balance control of the helicopter.	EO: 05-1-8 & 05-8 series.
4.3.6	Know the types, characteristics and uses of plastics in aircraft construction, their distinguishing tests and precautions for handling, and be able to clean, cut and cement plastics.	EO: 05-1-3 and AMR: chap 15.
4.3.7	Know the types of hardware and structural materials used in helicopter airframes, and be able to do hand rivetting.	EO: 70-10C, 75-50-5A & 05-1-3.
4.3.8	Know:	
4.3.8.1	The basic principles of hydraulics.	PHY: chap 5 and AMR: chap 1.
4.3.8.2	Open and close centre hydraulic systems.	AMR: chap 4.
4.3.8.3	Cleaning agents used in hydraulic systems.	EO: 05-1-2A.

4.3.8.4	Types of seals used in hydraulic systems.	EO: 05-1-2Z.
4.3.9	Be able to apply preventative measures to control corrosion.	EO: 05-1-2AH & 05-1-3.
4.3.10	Be able to touch up paint work.	EO: 50-5 series & 05-1- 2U.
4.3.11	Know the principles and uses of safety wiring and other devices for aircraft metal fastenings.	EO: 05-1-2AQ & 05-1- 3/8.
4.3.12	Be able to bend, replace and repair rigid and flexible tubing.	EO: 05-1-2A, 05-1-3/11 & 05-1-3/12.
4.3.13	Know the following safety precautions or reporting procedures:	
4.3.13.1	General safety precautions.	RSP: no 2-1-1 and EO: 00-80-4.
4.3.13.2	The reporting procedure for aircraft maintenance errors.	EO: 00-80-3.
4.3.13.3	The reporting procedure for ground accidents to aircraft.	EO: 00-80-2.
4.3.13.4	Cleanliness.	EO: 00-80-4/2.
4.3.13.5	Fire hazards.	EO: 00-80-4/3.
4.3.13.6	Propellers.	EO: 00-80-4/10.
4.3.13.7	The use of lifting tackle.	EO: 00-80-4/14.
4.3.13.8	Jacking of aircraft.	EO: 00-80-4/27.
4.3.13.9	The use of soldering irons on aircraft.	EO: 00-80-4/29.
4.3.14	Know the function, construction and the principles of operation of the following helicopter assemblies and systems:	
4.3.14.1	Structural components.	EO: 05-2 group & 05-3 group.
4.3.14.2	Engines.	EO: 10A-1 series & 10 A- 2 series.
4.3.14.3	Flight control systems.	EO: 15-70 series.
4.3.14.4	Self contained hydraulic units.	EO: 15-70 series.
4.3.14.5	Hydraulic brake systems.	EO: 15-45 series.
4.3.14.6	Ignition systems.	EO: 15-5 series.

4.3.14.7	Oil systems.	EO: 10A-1-1K, 10A-1- 2AC, 05-2 group & 10A-3 group.
4.3.14.8	Fuel systems.	EO: 15-20 series, 45-5 series & 05-1-1.
4.3.14.9	Cooling systems.	EO: 05-2 group & 15-25 series.
4.3.14.10	Rotor blades and heads.	EO: 05-2 group.
4.3.14.11	Power trains.	EO: 05-2 group & 15-110 series.
4.3.14.12	Landing gear.	EO: 15-35 series & 15-50 series.
4.3.14.13	Auxiliary heaters and heat exchangers.	EO: 15-85 series.
4.3.15	Know the types of equipment, special tools and procedures used in removing:	
4.3.15.1	Engines.	EO: 05-2 group & 10A-2 group.
4.3.15.2	Power train assemblies.	EO: 05-2 group.
4.3.15.3	Rotor blades and heads.	EO: 05-2 group.
4.3.16	Know the purpose and location of:	
4.3.16.1	Helicopter instruments.	EO: 20-1-2G.
4.3.16.2	Helicopter electrical equipment.	EO: 05-2 group.
4.3.17	Be able to use and service ground-handling equipment.	EO: sec 65.
4.3.18	Be able to use RCAF engineering orders, maintenance manuals, manufacturers' service instructions and parts lists.	EO: 05-4 group & 00- 1-1.
4.3.19	Be able to make emergency repairs to skins and structural components.	EO: 05-3 group and 05- 1-3.
4.3.20	Be able to maintain and repair helicopter tires and tubes.	EO: 110-5 series.
4.3.21	Be able to locate and rectify simple faults in:	
4.3.21.1	Ignition systems.	BIAH and MAG and EO: 15-5 series.

4.3.21.2	Fuel systems.	EO: 15-10, 15-15, 15-20 & 15-75 series.
4.3.21.3	Cooling systems.	EO: 15-25 series & 05-2 group.
4.3.21.4	Engines.	EO: sub-sec 10A.
4.3.21.5	Power trains.	EO: 15/110 series & 05-3 group.
4.3.21.6	Rotor blades and heads.	EO: 05-3 group & 05-2 group.
4.3.21.7	Flight control systems.	EO: 05-3 group, 05-2 group & 15-70 series.
4.3.21.8	Landing gear (including flotation gear).	EO: 15-35 series & 15-50 series.
4.3.21.9	Brake systems.	EO: 15-45 series.
4.3.21.10	Auxiliary heaters and heat exchangers.	EO: 15-85 series.
4.3.22	Know preservation procedures for shipping or storing aircraft parts.	EO: 15-5-9, 05-1-9, 50-15A-2A, 50-15A-2B, 00-35-1, 10A-9 group & 05-9 group.

Group 3

- 4.4. In addition to the requirements for group 2, and to perform his duties satisfactorily, the group 3 tradesman must:

4.4.1	Be able to use and care for:	
4.4.1.1	Precision gauges and measuring devices	RSP: nos 2-1-4/1 & 2-2-18/2.
4.4.1.2	Stone dressers.	RSP: no 2-4-1/1 and EO: 70-1 A.
4.4.2	Be able to read mechanical drawings and prepare simple free hand working sketches.	ED: chaps 6, 7, 8 & 20.
4.4.3	Be able to preserve and pack helicopter parts.	EO: 15-5-9, 05-1-9, 10A- 9 group & 05-9 group.
4.4.4	Be able to carry out nondestructive inspections of metal components.	PM.

4.4.5	Be able to calculate basic weight and centre of gravity of helicopters.	EO: 05-1-8 & 05-8 group.
4.4.6	Be able to inspect, test and adjust helicopter engines and:	EO: sub-sec 10A.
4.4.6.1	Remove and repair complete cylinder assemblies.	EO: sub-sec 10A & 05-2 group.
4.4.6.2	Inspect, remove and install valve mechanisms.	EO: 10A-3 group.
4.4.6.3	Check cylinders, pistons, pins and rings for wear and damage.	EO: 10A-3 group.
4.4.6.4	Remove and install magnetos.	EO: 10A-3 group.
4.4.7	Be able to remove and replace complete engine assemblies.	EO: 10A-3 group & 05-2 group.
4.4.8	Be able to remove and install helicopter clutch, transmission and rotor gear box assemblies.	EO: 05-2 group.
4.4.9	Be able to carry out “Between- flight” and “Primary” Inspections of the complete helicopter including the:	EO: 00-50-7 paras 4, 5, 13, 35 & 36 & 00-15-1 para 4 secs 3 & 4.
4.4.9.1	Engine.	EO: 05-7 group.
4.4.9.2	Airframe.	EO: 05-7 group.
4.4.9.3	Electrical System.	EO: 05-7 group.
4.4.9.4	Instruments.	EO: 05-7 group.
4.4.9.5	Telecommunication equipment.	EO: 05-7 group.
4.4.9.6	Safety equipment.	EO: 05-7 group.
4.4.10	Be able to carry out periodic inspections of engines and airframes.	EO: 00-50-7 paras 6 to 8, 37 & 38 & 05-7A group.
4.4.11	Be able to inspect, test, adjust and do permissive repairs on:	
4.4.11.1	Ignition systems.	BIAH and MAG and EO: 15-5 series & 05-2 group.
4.4.11.2	Fuel systems.	EO: 15-10, 15-15, 15-20 & 15-75 series & 05-2 group.
4.4.11.3	Oil systems.	EO: 05-2 group & 10A-3 group.

4.4.11.4	Power trains.	EO: 15-110 series, 05-3 group & 05-2 group.
4.4.11.5	Rotor blades and heads.	EO: 15-110 series, 05-3 group & 05-2 group.
4.4.11.6	Helicopter flight control systems.	EO: 15-70 series, 05-3 group & 05-2 group.
4.4.11.7	Landing gear (including flotation gear).	EO: 05-3 group & 05-2 group.
4.4.11.8	Brake systems.	EO: 15-45 series & 05-2 group.
4.4.11.9	Aircraft internal heaters.	EO: 15-85 series & 05-2 group.
4.4.12	Be able to make appropriate entries in log books, maintenance schedules and other records concerning the maintenance, replacement of parts and repairs of helicopter engines and airframes.	EO: 00-15-1, 00-15-9, 00-15-10 & 00-15-13.
4.4.13	Be able to complete his portion of section accounting documents.	EME: Stat Ops K010.

5. Responsibility

- 5.1. The Helicopter Technician Group 2 is responsible, under general supervision, for servicing helicopters, repairing simple faults in helicopter engines, flight control systems, landing gear and brake systems and for doing emergency repairs to skins and structural components.
- 5.2. The group 3 tradesman is responsible, under minimum supervision, for inspecting, testing, adjusting and doing permissive repairs to helicopters excluding structural repairs. When accompanying a helicopter away from its base for an extended period of time, he is responsible for its maintenance and servicing.
- 5.3. Qualified group 3 tradesmen who have been checked out on para 4.4.9 and have been granted signing authority for a particular model helicopter by a RCME officer in charge of aircraft maintenance are also responsible for completing Between-flight and Primary Inspections of the complete helicopter and for signing the applicable certificate of satisfactory completion of inspection.

6. Working Conditions

- 6.1. Physical

6.1.1. His duties require considerable effort and involve working in cramped and awkward places while servicing and repairing helicopters.

6.1.2. When working on aircraft in the open, where they frequently are, duties involve exposure to the weather and extremes of temperature for varying periods.

6.2. Stresses

6.2.1. Mental stress is above normal due to the attention required to prevent equipment failures where serious consequences could result.

6.2.2. Tradesmen are subject to additional stress from noise and vibration.

6.3. Occupational Hazards

6.3.1. The normal hazards are cuts, bruises, burns and minor skin irritation. Tradesmen are exposed to more serious injury from moving aircraft and revolving rotors.

6.3.2. In addition, hazards of flight are encountered when these tradesmen are required to take part in test flights.

7. Method of Qualification

7.1. Qualification for Group 2

7.1.1. To qualify as a Helicopter Technician Group 2, the candidate must:

7.1.1.1. Have qualified as a Vehicle Mechanic Wheeled Group 1 or as a Vehicle Mechanic Tracked Group 1; and

7.1.1.2. Have passed a helicopter repair course authorized by Army Headquarters.

7.1.2. Qualification may then be obtained by passing a trade test authorized by Army Headquarters.

7.1.3. The scope of the trade test will include the requirements of paragraph 4.3 of this specification.

7.2. Qualification for Group 3

7.2.1. To qualify as a Helicopter Technician Group 3, the candidate must be qualified as a Helicopter Technician Group 2.

7.2.2. Qualification may then be obtained by passing a trade test authorized by Army Headquarters after having taken a minimum of twelve months in-job training on helicopter engine and airframe repairs with the Canadian Army, Royal Canadian Navy, Royal Canadian Air Force or the Department of Transport.

7.2.3. The scope of the trade test will include the requirements of paragraph 4.4 of this specification.

8. Career Possibilities

8.1. Trade Progression

- 8.2. A Helicopter Technician Group 3 may progress to Aircraft Artificer Group 4.

9. Related Occupations

- 9.1. Navy — Air Fitter
- 9.2. Air Rigger Air Force — Aero-Engine Technician
- 9.3. Airframe Technician

Dictionary of Civilian Occupational Titles	Code Number
Airplane Mechanic (air trans)	5-80.100
Aircraft Mechanic (air trans)	5-80.120
Aircraft Engine Mechanic (air trans)	5-80.130

10. Implementing Instructions

- 10.1. This specification replaces that for Helicopter Technician Groups 2 and 3 dated 1 Apr 60.
- 10.2. It has been rewritten primarily to bring the training references up to date and the only other major change is the movement of the responsibility for certain inspections from the group 2 to the group 3 portion of the specification.
- 10.3. Army Headquarters will issue instructions for those Vehicle Mechanics in RCME who have completed their training in helicopter repair or who commenced such training prior to 1 Apr 60:
 - 10.3.1. Recognizing the qualifications already gained by such tradesmen; and
 - 10.3.2. Detailing the further training they must take before they are qualified and remustered as Helicopter Technicians.
- 10.4. Vehicle Mechanics in RCME who are now undergoing training in helicopter repair, and who commenced such training on or after 1 Apr 60, must qualify in accordance with paragraph 7 of this specification.

Effective Date: 1 Jan 62