



NEW ZEALAND QUALIFICATIONS AUTHORITY
MANA TOHU MĀTAURANGA O AOTEAROA

Final date for issue of award is 31 December 2008

NEW ZEALAND CERTIFICATE IN ENGINEERING - AERONAUTICS

WORK EXPERIENCE GUIDELINES

Aim of Work Experience

The aim of the work experience component for the New Zealand Certificate in Engineering is to supplement and integrate the academic learning with practical knowledge and experience, and hence to develop further competence in technician engineering through actual on-job experience.

Sources of Suitable Experience

Occupations in this field are open to staff of military establishments, airline corporations and private operators, and private aircraft manufacturers. Principal spheres of activity lie in engines and airframes, while overall design can apply to small aircraft. Major cargo and passenger airliners are, at present, not designed or manufactured in New Zealand, but candidates could be sent overseas for experience in design. Aircraft can include: cargo, passenger, military, helicopters, microlite, industrial and new types of aircraft. Samples only of suitable work experience are indicated below.

Advising the Employer

The candidate's employer should be advised by the candidate of the requirements of these guidelines, preferably prior to the candidate commencing employment but in any event as early as possible in the work experience, in order to ensure that the employer is aware of the type of experience required and can make appropriate arrangements to provide it.

Work Experience Credit for related qualifications

Between six months and eighteen months work experience may be credited from a completed Trade Certificate, Advanced Trade Certificate, or National Certificate at level three or above related to aeronautic engineering.

The time credited will be determined according to the details recorded in the Work Experience Record Book. Candidates should submit a certified copy of the certificate. (A certified copy is one which is signed by a legally authorised person such as a justice of the peace, a solicitor, or a public notary, as an authentic copy of the original.)

It may be possible that time can be credited from other qualifications or from other work experience. Advice should be sought from the Qualifications Authority.

General

The process of approving Work Experience Record Books will be assisted by cross-referencing activities entered in the book to the activities listed below.

1 Design

- 1.1 Draughting aircraft airframes and incorporating service lines, hydraulics and flying controls.
- 1.2 Working in an experimental aerodynamics laboratory, testing materials, aerodynamics of flight, fatigue and non destructive testing.
- 1.3 Testing suitability of power units for aircraft.
- 1.4 Adapting controls e.g. fluidics, hydraulics to design modification required for special purposes e.g. aerial top dressing.
- 1.5 Testing by X-rays and similar, of areas of suspected weakness in airframes and/or other aircraft parts.
- 1.6 Adaptation of airframes for special purposes e.g. ski planes, float planes, ice landings.
- 1.7 Undertaking metallurgical testing or specification for airframe or mechanical parts required for repair or maintenance.

2 Airframe

- 2.1 Dismantling for inspection of possible weaknesses or stress evidence in airframe components.
- 2.2 Replacing or strengthening of airframe components.
- 2.3 Making adaptations to airframes e.g. for industrial use, hostess services, etc.
- 2.4 Using general engineering plant for making airframe replacements, e.g. lathes, milling, grinding, boring, cutting, presswork, casting and finishing.
- 2.5 Fitting airframes testing equipment for breakdown, frequency of vibration, magnitude of vibration and similar study.

2.6 Removing engines from airframes.

- 2.7 Assisting with maintenance and/or installation of electrical and electronic equipment, transducers and control equipment.
- 2.8 Undertaking skin repairs.
- 2.9 Checking the correct functioning of aircraft seals for pressurising compartments.

3 Power Unit Servicing

- 3.1 Removing engines from airframes, or preparing for servicing of engines without removal.
- 3.2 Dismantling of various types of aircraft power units, internal combustion (normally aspirated and turbo charged), jet and turbo-jet.
- 3.3 Undertaking maintenance of any of aircraft engines, part replacements, checking tolerances of mechanical parts.
- 3.4 Checking and maintenance of fuel lines, hydraulic lines, actuating mechanism pilot mechanical controls and similar automatic mechanisms.
- 3.5 Assisting with electrical and electronic equipment which serve power units of aircraft.

4 Miscellaneous Work Experience

- 4.1 Servicing and/or installation of electronic equipment.
- 4.2 Servicing and/or installation of electrical services of any of the aircraft types listed in the preamble.
- 4.3 Servicing of an engineering nature the heating, ventilation, air conditioning, refrigeration, lighting, water and sanitary services of aircraft having these types of units.
- 4.4 Checking and maintaining mechanisms and control of cabin pressure systems.
- 4.5 Servicing of telecommunications of aircraft to airport and within aircraft.

July 1999