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**FIRE AND RESCUE SERVICES -  
VEGETATION**  
**Load water and additives for aerial  
operations**

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<b>level:</b>	<b>3</b>
<b>credit:</b>	<b>2</b>
<b>final date for comment:</b>	March 2008
<b>expiry date:</b>	December 2009
<b>sub-field:</b>	Fire and Rescue Services
<b>purpose:</b>	<p>This unit standard is for fire and rescue personnel at vegetation fires. They will be able to perform operations under supervision as part of a crew.</p> <p>People credited with this unit standard are able to: demonstrate knowledge of safe practices when loading aircraft with water, and water with additives; select site and set up filling equipment; and fill helicopter buckets or fixed wing hoppers with water and additives.</p>
<b>entry information:</b>	Prerequisite: Unit 20388, <i>Work safely with aircraft at emergency incidents</i> , or demonstrate equivalent knowledge and skills.
<b>accreditation option:</b>	Evaluation of documentation and visit by NZQA and industry.
<b>moderation option:</b>	A national moderation system of moderation networks has been established by the Fire and Rescue Services Industry Training Organisation.
<b>special notes:</b>	<ol style="list-style-type: none"><li>1 Compliance with the fire and rescue service provider's Health and Safety policy and procedures is mandatory.</li><li>2 Assessment against this unit standard may take place under real or practical simulated conditions.</li></ol>

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- 3 The primary reference for this unit standard is the booklet '*Aircraft Safety, Fire Management - Working with the Aviation Sector*' published by the National Rural Fire Authority (ISBN 0-908920-66-0). This reference is available from FRSITO, PO Box 11988, Wellington, or from the NRFA, PO Box 2133, Wellington.

## **Elements and Performance Criteria**

### **element 1**

Demonstrate knowledge of safe practices when loading aircraft with water, and water with additives.

Range: fixed wing, rotary wing

### **performance criteria**

- 1.1 Requirements to provide a safe and efficient work area are explained in accordance with the primary reference.

Range: defined working zone, location of equipment and consumables, vehicle parking, security of loose articles.

- 1.2 Requirements for personal protective equipment for the filling operation is explained in accordance with the fire and rescue service provider requirements.

Range: factors - water/cold protection, head/eye/ear protection, safety footwear.

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- 1.3 Methods of communication within the crew during a filling operation are explained in accordance with the primary reference.
- 1.4 Requirements for safe handling of retardant and suppressant concentrates are explained in accordance with manufacturers guidelines on the material safety data sheets.
- 1.5 Requirements of personal fitness and setting a work pace for operational safety are explained in accordance with the primary reference.

**element 2**

Select site and set up filling equipment.

Range: fixed wing operations, rotary wing operations

**performance criteria**

- 2.1 Site is selected in accordance with the tactical requirements of the incident action plan.
- Range: water requirements, aircraft requirements, access, operational safety.
- 2.2 Equipment is selected and set up for use in accordance with the tactical requirements of the incident action plan.
- 2.3 Consumables are arranged on site in accordance with the tactical requirements of the incident action plan.
- Range: class A foam, fire retardant, other water additives, portable water supplies, pump fuel.

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**element 3**

Fill buckets or hoppers with water and additives to safe load levels.

Range: helicopter buckets or fixed wing hoppers.

**performance criteria**

3.1 Filling is carried out in accordance with the fire and rescue service provider requirements.

Range: load requirements, additive requirements, safe practices.

3.2 Communications are established and maintained between crew personnel and helipad/airstrip supervisor throughout the operation in accordance with the primary reference.

Range: hand signals, radio communications.

3.3 Requirements for adjustments of heli-bucket drop pattern are explained in accordance with the primary reference.

3.4 Equipment used is re-commissioned after use in accordance with the primary reference.

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**Comments on this unit standard**

Please contact the Fire and Rescue Services Industry Training Organisation [info@frsito.org.nz](mailto:info@frsito.org.nz) if you wish to suggest changes to the content of this unit standard.

**Please Note**

Providers must be accredited by the Qualifications Authority or a delegated inter-institutional body before they can register credits from assessment against unit standards or deliver courses of study leading to that assessment.

Industry Training Organisations must be accredited by the Qualifications Authority before they can register credits from assessment against unit standards.

Accredited providers and Industry Training Organisations assessing against unit standards must engage with the moderation system that applies to those standards.

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Accreditation requirements and an outline of the moderation system that applies to this standard are outlined in the Accreditation and Moderation Action Plan (AMAP). The AMAP also includes useful information about special requirements for providers wishing to develop education and training programmes, such as minimum qualifications for tutors and assessors, and special resource requirements.

This unit standard is covered by AMAP 0039 which can be accessed at <http://www.nzqa.govt.nz/site/framework/search.html>.