HEAVY PLANT
IN THE NSW RFS

Transport of plant checklist

When transporting plant to the fire site you must ensure that available routes to the site are suitable. You must check the following:

- road load limits
- bridge carrying capacity
- height restrictions
- gradients
- local road restrictions.

At the staging area you must ensure:

- accessibility for low loaders (floats)
- sufficient area for unloading, manoeuvring and parking of plant (and their floats)
- staging area is safe from fire threat
- **a fire appliance escort is assigned**
- Is plant assigned to operate as part of a task force?

Refer to information that may be included in pre-incident plans or the s 52 plan.

Discuss these requirements with your plant contractors as they will advise whether "oversize" heavy vehicle regulations will apply for the transportation of their plant. As a rule of thumb, typically the transportation of plant up to medium-sized machines is within oversize vehicle limits.

OPERATOR PROTECTION SYSTEMS – ROLLOVER PROTECTION SYSTEMS (ROPS) AND FALLING OBJECT PROTECTION SYSTEM (FOPS)

Modern earth moving machinery is required to feature rollover protection (ROPS) which includes the plant operator wearing the seatbelt fitted to the machine. Plant operating in locations where there is a risk of falling objects are also required to be fitted with falling object protection systems (FOPS).

PLANT NUMBERING

When plant is registered with the NSW RFS, a unique identification number is allocated and a set of decals with this number are issued. For earthmoving plant these decals may be displayed on each side of the machine as shown in the images, or for vehicles they may be displayed front and rear.

This number enables the plant to be readily identified at incidents, aids with the tracking of the plant and provides a call sign for radio communications. Correctly identifying and tracking plant at incidents is important for safety reasons, particularly during fast running fires and where the fire fighters working near the plant may not be familiar with the machine. This number is also for correctly identifying the machine in the payment process.

HEAVY PLANT
IN THE NSW RFS

What is Heavy Plant?

Heavy Plant is also referred to as plant, heavy machinery or heavy equipment. These are terms typically used to describe earth moving machinery such as bulldozers (wheeled and tracked), graders, excavators, front end loaders, log skidders, rollers/ compactors, floats, tractors, mulchers/ tritters, bulk water tankers and refuelling tankers.

Why use machinery on the fire line?

Heavy machinery has always played an important role in fire suppression and mitigation work. Increasingly plant is being used to supplement the traditional manual methods with mechanical means to accomplish tasks more rapidly and efficiently. Fire agencies and land managers have recognised the benefits of using machinery in fire operations particularly with respect to worker safety, productivity and cost efficiency. Benefits of heavy plant include:

- using Heavy Plant in control line construction acts as a force multiplier for crews, increasing their capability and productivity
- frees up other firefighting resources to focus on tasks in areas where heavy plant is prohibited
- provides access to a highly-skilled labour workforce and specialised equipment
- provides safer means for dealing with problem trees compared to manual tree felling
- faster and safer broad acre fire suppression requiring fewer firefighting crews.

What is the NSW RFS Heavy Plant Program about?

Historically, the NSW RFS has not had standardised processes or a directory for the engagement and management of plant for incidents. Over the years Districts that routinely use plant for fire suppression and mitigation work have developed their own level of expertise and list of contractors.

The NSW RFS Heavy Plant Program provides policy, procedures and the framework for the use of heavy plant. These tools were developed in consultation with NSW RFS volunteers, Districts and other agencies to create a unified approach with the longer term objective to establish Bush Fire Coordinating Committee (BFCC) endorsed policy and procedures.

The program was also developed with support from interstate fire agencies including the Victorian Department of Sustainability and Environment (DSE) and international firefighting agencies from the US and Canada.

The objectives of the program are to enable the Service to better manage the risks typically associated with the engagement of heavy plant for fire operations. These risks relate to:

- plant operator safety
- managing the impact to the environment
- management of the financial process
- enhancing operational capability
- managing probity issues.

How is Heavy Plant engaged?

Although the administration of the Heavy Plant Program is through the Operational and Mitigation Support Services Group of the Operational Services Directorate, **the engagement and management of Heavy Plant remains at the local level.** The decision to engage plant contractors is by the approval of the Regional Operations Manager for Class 1 and 2 incidents and the Incident Controller for Class 3 incidents.

The Incident Management procedures (IMPs) for the engagement of plant have been prepared in consultation with the NSW RFS Heavy Plant Program Focus Group and the Inter-agency Heavy Plant Consultative Group comprising of the National Parks & Wildlife Service, Forests NSW and Fire and Rescue NSW with assistance from DSE Victoria.

Heavy Plant Register

Central to the program is the creation of a plant contractor directory, known as the Heavy Plant Register for use by Districts as a ready reference when sourcing locally-available Heavy Plant.

The term 'plant contractor' refers not only to private contractors but also councils and other government agencies that have registered their plant with the NSW RFS.

As of 2011 there are approximately 200 companies and organisations that have registered with the number of items of plant totalling more than 1,000 machines. It is anticipated that this will expand to approximately 1,500 machines within 12 months.

How can companies and organisations register with the NSW RFS Heavy Plant Register?

The process for registering plant with the NSW RFS is to submit a completed request for proposal (RFP). A copy of the RFP can be downloaded from the NSW RFS website.

To be accepted on to the Heavy Plant Register, contractors are required to be insured and their plant meet the requirements specified including: Roll Over Protection System (ROPS), flashing amber warning lights, knapsack or fire extinguisher, UHF CB radio, NSW RFS Heavy Plant identification number and Falling Object Protection System (FOPS). Each year, the RFP will be released providing contractors with the opportunity to submit revised rates for the hire of their plant.

For further information email heavy.plant@rfs.nsw.gov.au

HEAVY PLANT REFERENCE GUIDE

Illustrated below are the commonly used types of Heavy Plant that are engaged to support fire operations and mitigation work with a description of the machines and their features.

BULLDOZER OR DOZER

(NSW RFS Category 20). Designed to push material, useful for trail and control line construction. Tracked machines are slower but better suited to steeper country due to their greater power, lower ground pressure and traction. Wheeled machines are faster, don't tear up road surfaces and are better suited for working in areas where soil disease or weed seed is a known issue. Control line construction rates can vary from 250 – 1000m/hr.

Small (tracked) bulldozer – e.g. Caterpillar model D3 to D5 or Case model 550 to 850. Blade width 2.5 to 3.2m. Mass 8 to 10t.

Medium (tracked) bulldozer – e.g. Caterpillar model D6 and D7, Case model 1150 to 1850. Blade width 3.0 to 3.3m. Mass 11 to 30t.

Large tracked bulldozer – e.g. Caterpillar model D8 to D11 or Komatsu model D155 to D575. Blade width 4 to 5m. Mass 31 to 120t.

HYDRAULIC EXCAVATORS AND FOREST HARVESTERS

(NSW RFS Category 20). Forest harvesters are designed for operating in steep terrain typical of plantation forests. They have hydraulic grabs (grapples) for holding, lifting, bunching, stacking timber. These machines are useful for clearing logs, dealing with dangerous trees, stacking or breaking up windrows. Excavators may also be fitted with a blade, with a hydraulic thumb on the bucket, mulching heads or grabs enabling rapid construction of fire breaks with less impact than earth moving plant.

Excavators may be tracked or wheeled. Range in size from Mini (1t) to Large (85t). Able to be configured to perform a broad range of tasks.

Forest Harvesters may be tracked or wheeled. Designed for harvesting plantation timber even in steep terrain and used for road construction. Mass 25 to 40t.

Log Skidders can be tracked or wheeled. Typically used for lifting logs and pushing objects rather than trail construction. Mass 16 to 18t.

LOADERS

(NSW RFS Category 20). Can be fitted with loading forks and other attachments such as mulching heads. Useful for rapid control line construction in less dense forest, for shifting logs and other obstructions. Smallest model is the skid steer and compact tracked loaders which are well suited for working along the urban interface.

Skid Steer (Bobcat) and Compact Tracked Loader. Bucket capacity 0.5 to 0.7 m3. Mass 0.7 to 1.0t.

Backhoe Loader series. Bucket capacity 1.0 to 1.53 m3. Mass 10 to 12t.

Medium (tracked) Loader – e.g. Caterpillar model 953. Bucket capacity 1.6m3. Mass 16t.

MOTOR GRADER

(NSW RFS Category 20). Useful for rapidly constructing control lines in open grassland and around assets.

Typically medium in size with blades width 2.4 to 4.3m fitted with ripping tines. May also be fitted with a front blade. Mass up to 25t. Control line construction rates can be between 2 to 6 km/hr.

FLOATS

(NSW RFS Category 17). Used for transporting heavy plant.

Semi-trailer combination or may be tipper and trailer combination. Assessment of route and staging area to be considered prior to deploying.

LOADERS (CONT.)

Medium (Wheeled) Loader – e.g. Cat 900 series. Bucket capacity 2.3 to 4.3 m3. Mass 15 to 32t.

TRACTORS

(NSW RFS Category 20). Very useful machines for rapidly ploughing fire breaks in open grassland and around assets. These machines can be fitted with a range of attachments including buckets, ploughs, mulching (trittering) and slashing attachments.

Tractors range in size from a couple of tonnes to the large horsepower 30t agricultural tractors (example shown above).

BULK WATER TANKERS

(NSW RFS Category 13). Range in capacity from several thousand litres to 35,000 litres in the form of a semi-trailer tanker or a heavy rigid tanker towing a dog trailer.

Medium Bulk Water Tanker (10,000 – 16,000L) above with a Heavy BWT above right (16,000 – 35,000L). BWT may be a purpose built tanker or may be a tank(s) mounted on the back of a tip truck, table top truck or on semi trailer. Important for contract tankers to have Storz adaptors for coupling to fire tankers.

FIELD SERVICE VEHICLES

(NSW RFS Category 17). These range in size from utilities to medium rigid trucks. These are basically a mobile workshop.

Above is a NSW purpose built field service vehicle, designed to be deployed during campaign fires to provide field (on site) servicing of fire tankers at base camps and assembly areas.

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