



Queensland Society of Model and
Experimental Engineers Inc.

Trainee Steam Locomotive Driver's

Test Information and Logbook

Ver 4 15/10/2023

Driver's name: _____

Requirements for Acquiring a QSMEE Steam Train Driver's Ticket

YOU MUST BE IN POSSESSION OF A NON_STEAM DRIVER TICKET BEFORE OBTAINING A STEAM DRIVER'S TICKET.

NB: Before driving on the QSMEE track, trainee drivers must familiarise themselves with

- 1) the QSMEE steam locomotive running procedures and signalling practices, which are set out from p. 4 to p.7 in this booklet.
- 2) the Australian Association of Live Steamers (AALS) Code of Practice Operations which can be found on the QSMEE page in the members section.

To obtain a QSMEE steam train driver's ticket, QSMEE trainee drivers must satisfy all requirements in the list below, and complete all records of their training, including signatures and dates, in the later part of this driver training logbook.

All driving identified below must be on the QSMEE track **outside** public running operations, 10.30am–3pm on all running days.

- **Supervised Driving**

Operate the club locomotive under the supervision of a QSMEE steam train driving instructor for a minimum of 6 hours.

OR

Operate the club locomotive under the supervision of a QSMEE steam train driving instructor for a minimum of 1 hour AND operating another steam locomotive (your own or someone else's) under the supervision of a QSMEE-certified steam train driving instructor (see list at the end of this book) for a minimum of 5 hours, i.e., all up a minimum of 6 hours of supervised driving.

- **Firing Procedures**

Perform 4 locomotive firing procedures on the club locomotive under the supervision of your steam train driving instructor, a boiler inspector, or any other QSMEE-nominated certified steam driver, ticking each step listed in the logbook records when you have completed them.

OR

Perform 1 locomotive firing procedure on the club locomotive under the supervision of your steam train driving instructor, a boiler inspector or any other QSMEE-nominated certified steam driver AND 3 more locomotive firing procedures on another steam locomotive (your own or someone else's), ticking each step listed in the logbook records when you have completed them.

- **Stabling Procedures**

Perform 4 locomotive stabling procedures on the club locomotive under supervision of your steam train driving instructor, a boiler inspector, or any other QSMEE-nominated certified steam driver, ticking each step listed in the logbook records when you have completed them.

OR

Perform 1 locomotive stabling procedure on the club locomotive under the supervision of your steam train driving instructor, a boiler inspector or any other QSMEE-nominated certified steam driver AND 3 more locomotive stabling procedures on another steam locomotive (your own or someone else's), ticking each step listed in the logbook records when you have completed them.

When you have completed the requirements in the log book, the instructor will advise you if they feel you are ready to be tested. The instructor may feel you need more experience before you are tested and will advise accordingly. Once the instructor feels you are ready to be tested, you can then approach a QSMEE boiler inspector and arrange for your examination with the inspector.

With the inspector you need to

- pass a short verbal test on the names and functions of the parts of the boiler and the locomotive.
- demonstrate that you can drive the testing locomotive competently and unassisted.
- demonstrate that you are familiar with the track, its signalling system and emergency procedures.

When a trainee has passed the examination, the QSMEE boiler inspector will present the newly qualified driver with their QSMEE steam train driver's ticket soon after.

If a new QSMEE member presents written proof that they are a certified driver of either a model steam train through an affiliated model engineering society OR of a full-size steam train, they do not need to complete the driver training section of this log book. The new member will, however, still have to familiarise themselves with

- 1) the QSMEE steam locomotive running, emergency and signalling practices.
- 2) the Australian Association of Live Steamers (AALS) Code of Practice Operations at <http://www.aals.asn.au/AALS-Resources.htm>

QSMEE Steam Locomotive Running Procedures

QSMEE trainee drivers must be familiar with the content of Section 9 (Boiler Operation) of the Australian Miniature Boiler Safety Committee (AMBSC) Steel or Copper Code. A copy of the Code is available in the QSMEE library.

NB! Trainee drivers are reminded that the operational procedures listed in this manual have been tailored to suit the Society Steam locomotive “Warner”. If you are using your own locomotive for any of the operational procedures there might be slight operational differences peculiar to your own locomotive that you will need to take into consideration.

Trainee drivers must:

Before lighting up

- prepare boiler treatment to dose feed water.
- fill the tender with water and treatment if the instructor advises this is needed.
- insert all boiler plugs into the boiler and then fill the boiler with water and boiler treatment to show a 1/4 gauge glass level (water level will rise during firing up).
- check the electric boiler feed pump is fully operational.
- check the water gauge is operational by opening the water gauge drain valve and watching the water level drop.
- drain all water from the reservoir of the hydrostatic lubricator and then fill the reservoir with *steam oil*.
NB! (1) Ensure this is steam oil and not any other type of oil.
(2) The lubricator will always appear to be full of oil, even when it could be empty of oil.
- attach the electric blower to the chimney or the air blower to the compressed air hose

During steaming up

- check brake is on and reversing lever is in mid-gear.
- check grate is clean, add kindling, light fire and turn blower on.
- oil motion and grease motion where indicated.
- fill tender with coal then add coal to fire when needed.
- bring boiler up to steaming temperature with a gentle fire.
- turn off external blower when pressure gauge shows approx 30 psi, and turn on steam blower.
- when pressure reaches 100 psi, make sure the safety valve/s lifts (If the valve won't open, immediately extinguish the fire. See emergency procedures, page 4. Report this problem to a boiler inspector).
- check that the whistle works.
- turn on steam to the hydrostatic lubricator, and adjust the oil rate to one drop every 30–60 seconds.

When running

- turn on injectors to bring up water level to at least half a glass level.
- check that the track ahead is clear. Give way to all trains on the main line. Then release the brake.
- move reversing lever to forward. Open drain cocks and gently open the regulator.
- move locomotive forward, checking drain cocks are releasing water and steam.

- shut off drain cocks when only steam is being released.
- maintain a bright fire by frequently adding small amounts of coal that will also help to eliminate smoke production.
- only fire in safe areas of the track, remembering spark production is common when firing.
- maintain more than 1/2 a gauge glass level at all times.
- while running, always watch the track ahead and never exceed 10 km/hr. The most common accident at all tracks is hitting the train ahead.
- know all track and signal rules and follow them.

Emergency procedures

What to do in case of an emergency.

Whenever a serious accident or breakdown occurs, the first and most important duty to perform is to provide for the safety of the public and other club members. This is done by protecting the train in accordance with the procedures listed below. The boiler must also be protected and any assistance thought to be necessary must be immediately obtained.

Loss of fire on main line

- tell guard to stop traffic behind the crippled train.
- seek help from others to safely remove train from the main line.
- try to relight fire with kindling if water level is sufficient.

Loss of water level through (1) allowing it to fall below bottom gauge glass, (2) broken gauge glass, or (3) blown fusible plug

- tell guard to stop traffic behind the crippled train.
- extinguish fire by one of the following procedures (1) blocking the chimney and turning on the blower if possible, (2) dropping the grate, or (3) throwing dirt on the fire.
- seek help to remove train from main line.
- use electric water pump only if water is still visible in bottom gauge nut.
- report problem to boiler inspector as soon as possible.

Failure of loco due to mechanical reason/s

- tell guard to stop traffic behind the crippled train
- if problem is major, extinguish fire.
- seek help to remove train from main line.
- report problem to boiler inspector as soon as possible.

Temporary parking of locomotive

- return reversing lever to mid gear.
- apply brake.
- check water level.
- check fire.

- clean ash pan if needed.
- check water and coal levels in tender and fill them if needed.
- don't leave loco if the blower is on.
- ask another knowledgeable person to keep an eye on the loco if you have to leave the locomotive.
- oil the motion if you've been driving for more than one hour.

End of run procedure

- drive locomotive to steaming bay.
- return reversing lever to mid gear.
- apply brake.
- open cylinder drain cocks.
- turn off hydrostatic lubricator for both steam and oil supply.
- drop fire and clean ash pan.
- wait till boiler pressure is approx 20 psi, then blow down the boiler.
- when there is **no pressure or water** in the boiler, remove boiler plugs to allow air flow through boiler (*Opening the boiler while it still has pressure or boiling water is extremely dangerous*).
- open smoke box, brush the tubes and remove ash from smoke box, then reseal smoke box.
- replace the grate and clean ash pan again .
- clean exterior paint work of loco with an oily rag.
- polish brass on loco.
- release brake, stable the locomotive, and reapply brake.
- connect battery charger to battery of electric water pump and turn on.
- lock door of loco bay and main roundhouse door if your loco is the last to return.
- report any loco problems to a boiler inspector and record track problems in track problem register.

QSMEE Signalling Practices

Pine Valley signals and route indicator displays are as follows

Signal	Instruction
Red	Stop
Amber	Proceed with caution
Green	Go at normal speed
Flashing amber	Next signal at red
Red with lower amber	Branching off to left or right
Route indicator	Meaning
X	Points not working, do not proceed
/	Points set to right
\	Points set to left

If the route control box (green post with a small control panel attached) has a yellow light illuminated this indicates that the track system is in *unattended mode* and this means the points are under the driver's control – driver input required. If the yellow light is not illuminated the track system is in *attended mode* and in most locations the points are under the control of the signal cabin operator and are not operational from the local control point. There are a couple of facing points that are given over to drivers when in “attended mode” – these will be discussed during the Signalling/Points familiarisation.

Trainee Driver’s Logbook Records

Below are logbook records for trainee drivers and their supervisors to record times of each operation and sign/date accordingly.

Supervised Driving Time

Time	Date	Instructor’s signature

QSMEE Locomotive Firing Checklist No 1

This checklist appears four times in your logbook. Please use a new checklist for each of the four times you carry out Locomotive Firing procedures under the supervision of your driving instructor, boiler inspector or any other certified steam driver. Please tick each box when you’ve completed the action, and have supervisor sign and date at end of checklist, on all four occasions.

Firing: Before lighting up

prepare boiler treatment to dose feed water	
fill the tender with water and treatment if the instructor advises this is needed	
insert all boiler plugs into the boiler and then fill the boiler with water and boiler treatment to show 1/4 gauge glass water level (water level will rise during firing up)	
check the electric boiler feed pump is fully operational	
check the water gauge is operational by opening the water gauge drain valve and watching the water level drop	
drain all water from the reservoir of the hydrostatic lubricator, then fill the reservoir with <i>steam oil</i> . (NB: 1) Ensure this is steam oil and not any other type of oil. 2) The lubricator will always appear to be full of oil, even when it could be empty of oil.	
attach the electric blower to the chimney or the air blower to the compressed air hose.	

Firing: During steaming up

check brake is on and reversing lever is in mid-gear	
check grate is clean, add kindling, light fire and turn blower on	
oil motion and grease motion where indicated	
fill tender with coal	
bring boiler up to steaming temperature with a gentle fire	
turn off external blower when pressure gauge shows approx 30 psi, and turn on steam blower	
when pressure reaches 100 psi, make sure the safety valve/s lifts.	
check that the whistle works	
turn on steam to the hydrostatic lubricator, and adjust the oil rate to one drop every 30–60 seconds	

Signature of QSMEE official _____ Date _____

QSMEE Locomotive Firing Checklist No 2

Please tick each box when you've completed the action, and have your supervisor sign and date at end of checklist.

Firing: Before lighting up

prepare boiler treatment to dose feed water	
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fill the tender with water and treatment if the instructor advises this is needed	
insert all boiler plugs into the boiler and then fill the boiler with water and boiler treatment to show 1/4 gauge glass water level (water level will rise during firing up)	
check the electric boiler feed pump is fully operational	
check the water gauge is operational by opening the water gauge drain valve and watching the water level drop	
drain all water from the reservoir of the hydrostatic lubricator, then fill the reservoir with <i>steam oil</i> . (NB: 1) Ensure this is steam oil and not any other type of oil. 2) The lubricator will always appear to be full of oil, even when it could be empty of oil.	
attach the electric blower to the chimney or the air blower to the compressed air hose.	

Firing: During steaming up

check brake is on and reversing lever is in mid-gear	
check grate is clean, add kindling, light fire and turn blower on	
oil motion and grease motion where indicated	
fill tender with coal	
bring boiler up to steaming temperature with a gentle fire	
turn off external blower when pressure gauge shows approx 30 psi, and turn on steam blower	
when pressure reaches 100 psi, make sure the safety valve/s lifts.	
check that the whistle works	
turn on steam to the hydrostatic lubricator, and adjust the oil rate to one drop every 30–60 seconds	

Signature of QSMEE official _____ Date _____

QSMEE Locomotive Firing Checklist No 3

Please tick each box when you've completed the action, and have supervisor sign and date at end of checklist.

Firing: Before lighting up

prepare boiler treatment to dose feed water	
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fill the tender with water and treatment if the instructor advises this is needed	
insert all boiler plugs into the boiler and then fill the boiler with water and boiler treatment to show 1/4 gauge glass water level (water level will rise during firing up)	
check the electric boiler feed pump is fully operational	
check the water gauge is operational by opening the water gauge drain valve and watching the water level drop	
drain all water from the reservoir of the hydrostatic lubricator, then fill the reservoir with <i>steam oil</i> . (NB: 1) Ensure this is steam oil and not any other type of oil. 2) The lubricator will always appear to be full of oil, even when it could be empty of oil.	
attach the electric blower to the chimney or the air blower to the compressed air hose.	

Firing: During steaming up

check brake is on and reversing lever is in mid-gear	
check grate is clean, add kindling, light fire and turn blower on	
oil motion and grease motion where indicated	
fill tender with coal	
bring boiler up to steaming temperature with a gentle fire	
turn off external blower when pressure gauge shows approx 30 psi, and turn on steam blower	
when pressure reaches 100 psi, make sure the safety valve/s lifts.	
check that the whistle works	
turn on steam to the hydrostatic lubricator, and adjust the oil rate to one drop every 30–60 seconds	

Signature of QSMEE official _____ Date _____

QSMEE Locomotive Firing Checklist No 4

Please tick each box when you've completed the action, and have supervisor sign and date at end of checklist.

Firing: Before lighting up

prepare boiler treatment to dose feed water	
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fill the tender with water and treatment if the instructor advises this is needed	
insert all boiler plugs into the boiler and then fill the boiler with water and boiler treatment to show 1/4 gauge glass water level (water level will rise during firing up)	
check the electric boiler feed pump is fully operational	
check the water gauge is operational by opening the water gauge drain valve and watching the water level drop	
drain all water from the reservoir of the hydrostatic lubricator, then fill the reservoir with <i>steam oil</i> . (NB: 1) Ensure this is steam oil and not any other type of oil. 2) The lubricator will always appear to be full of oil, even when it could be empty of oil.	
attach the electric blower to the chimney or the air blower to the compressed air hose.	

Firing: During steaming up

check brake is on and reversing lever is in mid-gear	
check grate is clean, add kindling, light fire and turn blower on	
oil motion and grease motion where indicated	
fill tender with coal	
bring boiler up to steaming temperature with a gentle fire	
turn off external blower when pressure gauge shows approx 30 psi, and turn on steam blower	
when pressure reaches 100 psi, make sure the safety valve/s lifts.	
check that the whistle works	
turn on steam to the hydrostatic lubricator, and adjust the oil rate to one drop every 30–60 seconds	

Signature of QSMEE official _____ Date _____

QSMEE Locomotive Stabling Checklist No 1

This checklist appears four times in your logbook. Please use a new checklist for each of the four times you carry out Locomotive Stabling procedures under the supervision of your driving instructor, boiler inspector or any other certified steam driver. Please tick each box when you've completed the action, and have supervisor sign and date at end of checklist, on all four occasions.

drive locomotive to steaming bay	
return reversing lever to mid gear	
apply brake	
open cylinder drain cocks	
turn off hydrostatic lubricator for both steam and oil supply	
drop fire and clean ash pan	
wait till boiler pressure is approx 20 psi then blow down the boiler	
when there is <i>no pressure or water</i> in the boiler, remove boiler plugs to allow air flow through boiler (Opening the boiler while it still has pressure or boiling water is extremely dangerous.)	
open smoke box, brush the tubes and remove ash from smoke box, then reseal smoke box	
replace the grate and clean ash pan again	
clean exterior paint work of loco with an oily rag	
polish brass on loco	
release brake, stable the locomotive, and reapply brake	
connect battery charger to battery of electric water pump and turn on	
lock door of loco bay and main roundhouse door if your loco is the last to return	
report any loco problems to a boiler inspector and record track problems in track problem register.	

Signature of QSMEE official _____ Date _____

QSMEE Locomotive Stabling Checklist No 2

Please tick each box when you've completed the action, and have supervisor sign and date at end of checklist.

drive locomotive to steaming bay	
return reversing lever to mid gear	

apply brake	
open cylinder drain cocks	
turn off hydrostatic lubricator for both steam and oil supply	
drop fire and clean ash pan	
wait till boiler pressure is approx 20 psi then blow down the boiler	
when there is <i>no pressure or water</i> in the boiler, remove boiler plugs to allow air flow through boiler (Opening the boiler while it still has pressure or boiling water is extremely dangerous.)	
open smoke box, brush the tubes and remove ash from smoke box, then reseal smoke box	
replace the grate and clean ash pan again	
clean exterior paint work of loco with an oily rag	
polish brass on loco	
release brake, stable the locomotive, and reapply brake	
connect battery charger to battery of electric water pump and turn on	
lock door of loco bay and main roundhouse door if your loco is the last to return	
report any loco problems to a boiler inspector and record track problems in track problem register.	

Signature of QSMEE official _____ Date _____

QSMEE Locomotive Stabling Checklist No 3

Please tick each box when you've completed the action, and have supervisor sign and date at end of checklist.

drive locomotive to steaming bay	
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return reversing lever to mid gear	
apply brake	
open cylinder drain cocks	
turn off hydrostatic lubricator for both steam and oil supply	
drop fire and clean ash pan	
wait till boiler pressure is approx 20 psi then blow down the boiler	
when there is <i>no pressure or water</i> in the boiler, remove boiler plugs to allow air flow through boiler (Opening the boiler while it still has pressure or boiling water is extremely dangerous.)	
open smoke box, brush the tubes and remove ash from smoke box, then reseal smoke box	
replace the grate and clean ash pan again	
clean exterior paint work of loco with an oily rag	
polish brass on loco	
release brake, stable the locomotive, and reapply brake	
connect battery charger to battery of electric water pump and turn on	
lock door of loco bay and main roundhouse door if your loco is the last to return	
report any loco problems to a boiler inspector and record track problems in track problem register.	

Signature of QSMEE official _____ Date _____

QSMEE Locomotive Stabling Checklist No 4

Please tick each box when you've completed the action, and have supervisor sign and date at end of checklist.

drive locomotive to steaming bay	
return reversing lever to mid gear	
apply brake	

open cylinder drain cocks	
turn off hydrostatic lubricator for both steam and oil supply	
drop fire and clean ash pan	
wait till boiler pressure is approx 20 psi then blow down the boiler	
when there is <i>no pressure or water</i> in the boiler, remove boiler plugs to allow air flow through boiler (Opening the boiler while it still has pressure or boiling water is extremely dangerous.)	
open smoke box, brush the tubes and remove ash from smoke box, then reseal smoke box	
replace the grate and clean ash pan again	
clean exterior paint work of loco with an oily rag	
polish brass on loco	
release brake, stable the locomotive, and reapply brake	
connect battery charger to battery of electric water pump and turn on	
lock door of loco bay and main roundhouse door if your loco is the last to return	
report any loco problems to a boiler inspector and record track problems in track problem register.	

Signature of QSMEE official _____ Date _____

QSMEE Signal/Points Operation

I confirm that _____
has demonstrated a satisfactory knowledge of the Signals/Points operation (date) _____.

Signature of QSMEE official _____

Proof of Existing Driver's Ticket

Club where ticket was valid / driver's ticket number / date of issue / letter of proof from club if no ticket is available

Signature of QSMEE official _____

QSMEE Driving Test

I confirm that _____
has passed the driving test that I conducted on (date) _____.

Signature of QSMEE official _____

This training logbook must be kept by QSMEE as part of its training records. On request, for a minimal reproduction fee QSMEE will provide a copy of this logbook to drivers once they have gained their steam locomotive driver's certificate.