

The International Film School Sydney

**Equipment Proficiency Test
Lighting**

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27 Rosebery Avenue
Rosebery, NSW 2018
(02) 9663 3789 • james@internationalfilmschool.com.au
www.internationalfilmschool.com.au
Equipment Proficiency Test Developed by James Hall

Contents

- 1. Location Check**
- 2. Power Current and Voltage**
- 3. What's running off a circuit**
- 4. Safety First at all times**
- 5. Tripping (Overloading) the RCD**
- 6. Should an accident occur**
- 7. Lifting and Handling**
- 8. Test Requirements - Equipment**
 - 8.1. Setting up an 800w RED Head**
 - 8.2. Changing a lamp**
- 9. Test Requirements – THEORY**
 - 9.1. Power Current and Voltage**
 - 9.2. What's Running of a circuit**
 - 9.3. Safety First at all times**
 - 9.4. Tripping (Overloading) the RCD**
 - 9.5. Should an Accident Occur**
 - 9.6. Lifting and Handling**

1. Location Check

Baseline of what equipment we are using highlighting its functionality:

- Reccie - determine how much spare electricity there is for you – Do a physical layout of the rooms in which you are shooting, you will be looking for:
 - Fuse box location
 - Number of power points and where they are located
 - Other items like refrigerators that are already in use
- Check the fuse box to see how many fuse holders there are:
 - Modern homes with circuit boards usually have switches with 1 switch for overhead lights and 4 circuits for power points.
 - Older style homes with circuit boards usually have 1 circuit for power points and 1 for the overhead lights.
 - Power points are usually 15amps and lights are usually 10amps
 - Generators that you can hire are usually 10 – 15amps also good for outdoors and industrial complex can have amps anywhere from 20amps – up to 32amps or more.

2. Power Current and Voltage

Baseline of the camera's manual features:

- WATTS is expressed as power
- AMPS is expressed as current
- VOLTS is expressed as current

240V is the standard voltage in Australia. It can be show as:

POWER = CURRENT x VOLTAGE

P = 240 volts x 10amps

P = 2400 watts

So 1 circuit of 10amps – 2400w of power can be run. Red Heads take 800W each so 3 Red Heads can be run of 1 circuit safely without blowing the power as long as there is no other appliance running at the same time.

3. What is running off a Circuit

Baseline of the camera's digital features:

- Make sure the main switch is turned off then turn off circuit 1 if it is a switched one
- Turn ON Main Switch
- Plug in a electrical device (small desk lamp) into the power point
- If the device comes on then the power point is not running off circuit 1
- If the device does not come on then the power point is running off circuit 1
- Label the power point 1
- Go back to the fuse box turning OFF the main switch then turn ON circuit 1 Turn off circuit 2 and repeat the steps above until other power points are labelled

- Draw yourself a floor plan if necessary of where the power points are
- Make sure you spread the load making 1 circuit free by removing other things
- It is best to have no appliances on at all apart from the power consumption, which can sometimes cause an interference hum on your audio track.

4. Safety First At All Time

Baseline of the camera's sound features:

What will be examined:

- Plug the RCD into the power point directly as this will protect the light from blowing the fuse then plug the light into the RCD
- Make sure all power leads are not going to be tripped on
- Gaffer tape down to protect them
- Use a chair to protect the light or get someone a GRIP or GAFFER to stand there
- Erect lights allowing the lamp head to be above 1 leg of the stand so that it won't tip over.
- Do not place the lights near curtains or other flammables.
- Make sure there is a non conducting object on set at all times for example something made of wood/plastic or rubber. THIS IS VERY IMPORTANT.

5. Tripping (Overloading) the RCD:

Baseline of the camera's output to media features:

What will be examined:

- The RCD will "trip" the lights shutting them off including the red button on the RCD.
- Go through the power point list determining which power points are appropriate and re-set the RCD.
- If the fuse is blown you will need to change the fuse by replacing the fuse wire in the fuse with the correct amp wire.
- Some of the more recent circuit boxes have safety cut off switches.
- They can be re-set after the overload no longer exists.

6. Should An Accident Occur:

- If someone does get electrocuted the person will be carrying the current and the ground surrounding him will also have the current.
- Assess the situation, act quickly, do not let anyone move in to touch the person.
- Turn off the power either at:
 - The power point or main switch in the fuse box
- Dial 000 for Medical AID/AMBULANCE
- Use non conducting material that is rubber, wood, or plastic material to push someone off the electric circuit.

7. Lifting and Handling:

- Bend you knees when lifting heavy loads
- If there are two handles for 1 load get someone else to help you
- Extra responsibility for the security of equipment must be taken when attempting any shots not on a tripod
- Grips and Camera Assistants should take extra and responsibility for the security of operators and equipment
- Equipment like C-stands although light are awkward and can fall over easy.
 - Sandbags must be used to secure the C-stands
 - Cables should be taped down or rolled up at all times
- Be careful with the Equipment - Never force nuts, bolts or locking rings
- Cameras should be supported by their handles and ensure they are secured before letting go.

8. Test Requirements Equipment:

What you will be tested on.

8.1 Setting up a 800w RED Head:

- Adjust the lighting stand or C Stand to be approx chest height ✓
- Stabilise the legs using a shot bag ✓
- Open the barn doors but don't point the light at anyone ✓
- RCD should be plugged into the power point ✓
- RCD should be tested that it is functioning ✓
- Plug the light into the RCD ✓
- Turn on the light ✓

8.2 Change a lamp:

- Put on the safety gloves
- Remove the light lead from the RCD
- The blown lamp will be hot be sure to use safety gloves
- Remove the blown bulb using a clean cloth or tissue
- The spring mounted lamp should be pushed to the left or right of its socket and gently removed
- Replace the blown bulb with a new one using a clean cloth
- Place the light lead in the socket and turn on the light

9. Test Requirements THEORY:

- What is a Reccie?
- What 3 things must be done when conduction a Reccie?
- What ampage is a modern home?
- What ampage is an old style home?

9.1 Power Current and Voltage:

- If one circuit has 10 amps what is the voltage?
- How many Red heads can be run off one circuit?
- How could one overload the power?

9.2 What is running off a Circuit:

- I have a modern home with 5 circuits. I want to differentiate between which are the light circuit and which are the power circuits. I turn off the mains and then turn off circuit 1. I plug a radio into a power point. The device comes ON. Is this power point running off circuit 1? (No its running off another circuit)
- I go back to the fuse box and turn ON circuit 1 then turn off circuit 2. I plug a fan into a power point. The device does not come ON. Is this power point running off circuit 2? (Yes it is running off circuit 2)
- Why would you spread the load when running the lights?

9.3 Safety First at all times:

- Why should you use an RCD instead of plugging the light cable directly into the wall?
- Where should you not place the lights?
- How could you secure power leads?
- What is very important to have on set at all times?

9.4 Tripping (Overloading) the RCD:

- What two things should you do if you overloaded the lights?
- Once the overload no longer exists what should you do?

9.5 Should an Accident Occur:

- If someone gets electrocuted where will the current be?
- What should you not allow someone to do in this situation?
- Should you cut the power at the mains or power point?
- Who should you call if someone gets electrocuted immediately?
- What should you use if you hope to break the electrical circuit between the person being electrocuted and the object?

9.6 Lifting and Handling:

- What should you do when lifting heavy objects?
- If any shots are not on a tripod what should you do?
- How can you secure Equipment like C-Stands?
- How should the Equipment be handled at all times?