

# SAM

## OPERATING AND PROCEDURE MANUAL Terms and Conditions

Plant Number P996 (Large)  
Plant Number P860 (Small)

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GET GOING	Page 1
SETTING UP YOUR SPOT	Page 2
PACKING UP SAM	Page 3
CHARGING THE BATTERY	Page 4
SERVICE AND FAULT FINDING	Page 5
DATA DOWNLOADING + SOFTWARE SETTINGS	

(Manual created with kind support from the City of Stirling)

## GETTING GOING:

1. Before taking putting SAM out, ensure the trailer is clean or washed.
2. Check tyres.
3. SAMs Self-Test. Turn the On/Off keyhole to ON with key on the side of the box for Smaller School Trailer, for the larger trailer Open the storage compartment of SAM and turn the switch to ON to run the self-test.
  - a. Test one will display 88
  - b. Test two will display the setting of the speed thresh-hold, usually set at 30 Km/h.
  - c. Test Three will display the output voltage of the battery, which should display 13 Volts before use, below 12 Volts the battery requires immediate charging or possible replacement.
4. Ensure that all items are present and properly secured in the storage box of SAM.

The storage Box of SAM has the following items.

  - a. 1 x length of galvanises chain
  - b. 5 x standard City of Stirling keyed alike padlocks
  - c. 1 x Complete set of road signs (30, 40, 50, 60Kp/h, Watch your Speed, School Zone, Roadworks, Delays Ahead)
  - d. 1 x Arlec battery charger
  - e. 1 x operator handbook
  - f. 1 x heavy duty 10 metre extension lead
  - g. 1 x Set of Keys (includes recessed square box key & padlock keys)
5. Make sure the SAM 'Watch your Speed' display is folded down and is fully secured with the rubber tie downs.
6. Hitch SAM to the vehicle using the jockey wheel to adjust the height so that the trail can be wound down onto the hitch of the vehicle (Note: the trail requires a 50mm ball on the hitch – the trailer must not be towed unless this is fitted)
7. Fit Hitch Pin to trailer
8. Secure safety chain on trailer to car with the Shackle
9. Plug Trailer Lights into the tow vehicle socket.
10. Raise Jockey wheel before towing
11. Check trailer lights are operational before towing
12. SAM must be manned at all times when in service. When not in service SAM must be left in a secure place.

## SETTING UP AT YOUR SPOT:

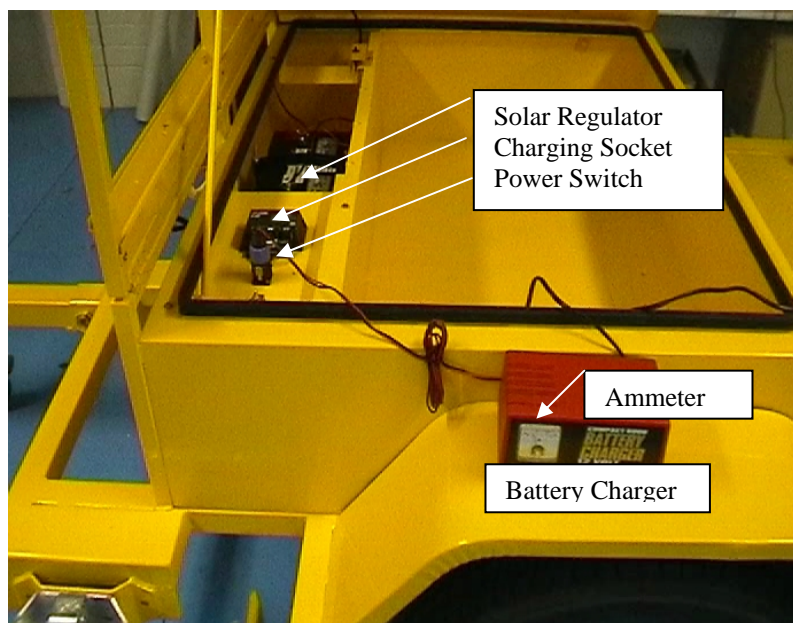
The selected location must

- Give the motorist a clear unobstructed view of the speed display.
  - Not inhibit or endanger pedestrians
  - Not inhibit motorists sight visibility to/from the road
  - Not be on a footpath or the road
  - Positioned at least 10 metres from parked cars and large signs or other obstructions.
  - Sighted down the road at a minimum distance of 40 metres and a maximum distance of 200 metres to avoid displaying erroneous readings.
  - If possible the trailer should be chained to a pole or tree to reduce any attempt to move or tamper with the positioning of the trailer. (Note: ensure the trailer and chain will not inhibit or endanger pedestrians or vehicles.
1. Release the rubber locking catches at the rear of the trailer and slowly raise the display/sign holding frame into the vertical position, the gas strut will assist in raising the frame.
  2. Turn the keyhole to ON with key provided on the top of the small school trailer, for the larger trailer Open the storage compartment of SAM and turn the switch to ON. The square recessed key will open the storage box and speed display box of SAM.
  3. Check the self test function
  4. Unfold the 'YOUR SPEED' panel on top of the trailer
  5. *No slide road signs to be used with the trailer due to Main Roads regulation. Schools may use the 'Watch your speed' sign Only.*
  6. Lower the Jockey wheel on the trailer hitch, turning the handle until the trailer is supported. Remove the hitch pin and lift the trail hitch latch, remove the electrical lighting plug from the tow vehicle and the safety chain. The trailer hitch can then be raised higher with the jockey wheel and separated from the vehicle.
  7. When an approaching vehicle on the road enters the selected zone, check that the display has operated and can be seen by the vehicle's driver. If the reading is displayed when the vehicle is too close, the driver will not be able to see the shown speed. If this occurs adjust the angle of the trailer to point further down the road.
  8. Once the operator has achieved the correct position of the trailer, the four supporting stays can be lowered into position to steady and secure the trailer.
  9. The display frame should also be secured in the vertical position with a padlock.
  10. The storage box can be locked with the recessed square key and then padlocked for extra security.

## PACKING UP SAM:

1. Turn the keyhole to OFF with key provided on the top side of the trailer for the school trailer, for the larger trailer Open the storage compartment of SAM and turn the switch to OFF
2. Unpadlock the display frame and the storage compartment to gain access.
3. If the Hitch and bar assembly have been removed and stored in the trailer compartment, refit the assembly to the trailer in the reverse procedure to removal.  
NOTE: Ensure that the hitch rod is passed through the hitch hole and securing pin are correctly installed and secured.
4. Remove the speed and other signage from the vertical holding slots and place in the storage compartment of the trailer.
5. Fold down the 'YOUR SPEED' sign on top of the display box.
6. Gently lower the display frame into the horizontal position on the trailer, the gas strut may pose some resistance at first when lowering. The frame will require some support from the operator to lower into position onto the rubber stops. The rubber locking catches can then be attached to the frame.
7. Attach the trailer reverse to taking it off (above)

Picture inside the trailer when storage compartment is opened.



## CHARGING THE BATTERY

1. Before and after use SAM must have a fully charged battery. The 40-Watt solar panel can keep the battery fully charged on a sunny day. During winter and low sunshine days the battery Voltage will deplete faster depending on traffic conditions and may require charging sooner.
2. SAM comes supplied with a ARLEC 240 Volt AC to 12 Volt DC battery charger.
3. The battery will require charging if the voltage is less than 12.5 Volts, this can be checked by doing a self test on the unit. Turn on the unit and the last function of the self test will be the voltage display if this reads less than 13 Volts, charge the unit. Ideally the unit should be given a 12 hour charge prior to and after each full day's shift of operation.
4. To charge the battery, plug the battery charger socket into the charging receptacle located inside the trailer compartment. Note: you must push in and turn the plug to activate the contacts and lock it into the socket. To take the battery charger out of the socket, push in the silver button.
5. Ensure the trailer is switched OFF otherwise the charging time will be much longer.
6. On the side of the trailer a weather protected socket is located where the supplied yellow heavy-duty extension lead is plugged into from a 240V AC mains supply. The trailer can only be charged in a weather-protected area away from rain and moisture. Ensure the battery charger is securely plugged into the female AC supply socket located inside the trailer.
7. Plug the male end of the extension lead into a 10amp power supply and switch to 'ON'
8. Check that all cables and the trailer are safely positioned whilst being charged. The trailer may only be charged in a well-ventilated weatherproof area to enable the compartment lid to be left ajar for any gases emitted by the battery to disperse during the charging process.
9. The ammeter on the battery charger provides a useful indication of the charging status of the battery. The usual indication on the ammeter when the battery initially goes on charge will be a display of around 5Amps. If the battery has been on charge for 12 hours and is accepting charge the ammeter should display approximately 2 Amps when fully charged.

**NOTE: DO NOT CHARGE THE BATTERY FOR MORE THAN 48 HOURS CONTINUOUSLY AS THIS CAUSES DAMAGE TO THE BATTERY.**

## SERVICE AND FAULT FINDING

There are two fuses locate in SAM, one is located on the voltage regulator, which can be found in the lockable box of the trailer, and the other can be found in the rear of the trailer. These fuses would generally only blow in a fault condition and should only be replaced with the same type and rating, the fuses should be only be replaced whilst SAM is switched off and not connected to any external electrical power source. In the event that the fuse should blow please contact the Road Safety Officer at the City of Stirling.

FAULT	CAUSE	REMEDY
No speed displayed. Not responding to passing vehicles	Flat battery	Charge battery
	Not Turned on	Switch should be in the 'ON' position
	Speed Threshold set too high	Check the setting on the speed threshold potentiometer in the RSD
Incorrect speed being displayed	SAM placed too close to parked vehicle or metal sign	Change location of SAM
Display segments not functioning correctly	Generally flat battery, also can be affected by (RF)radio frequency transmission & (EMR) high tension power lines	Charge Battery and have checked with load meter for battery condition- if it fails change battery. Change location to avoid any nearby RF and EMR
Computer not communicating with logger	Software not loaded, incorrect comms port. SAM not switched to 'ON'	Check software. Check Comms port Switch on SAM
No power to RSD	Flat battery or blown fuse	Charge or replace battery. Check and change fuses
Battery not charging	Battery charger fault  AC supply not switched 'ON' Damaged AC extension lead. Fuse blown on voltage regulator	Check or replace battery charger. Have AC power lead checked by a licensed electrician Change blown fuse with same type

## SAM DOWNLOADING DATA FROM LOGGER

Data about the passing traffic can be downloaded from the TRSD. The logged data will have the date, time, and vehicle speed in table format that can be imported directly into Excel (as an ASCII file), or viewed with any text editor.

1. Power up the laptop computer to Windows
2. Open the display box of the TRSD, the TRSD must be switched on to be able to communicate between the logger and laptop.
3. Plug in each end of the supplied 9 pin D connector cable to the logger and the laptop computer.
4. Click on the TRSD Icon on the desktop display of the laptop, this will open to the logger window.
5. Click on File, then download
6. The data from the TRSD will start to download
7. Click on Save As, then save the file to the Speedlogger folder and name the logged file. Use a unique filename which will easily identify to other persons the location where the data was collected. (The file can be found in the laptop C: program files/speedlogger/xxx.txt)
8. Once the file is saved and the operator is satisfied. Click on File and clear the memory ready for the next operation.
9. To view the file, start Excel, find the saved text file and open the text import wizard using the appropriate options, the file will then be converted into Excel. Save the file.

## SOFTWARE SETTINGS

1. The data logger allows for changing of; the date and time of logging of vehicles; length of time that the display will be held. And the speed threshold can be set by the speed potentiometer located inside the radar speed display box. To gain access to the settings, the supplied software will need to be installed onto a laptop computer.
2. To change the software settings, connect a computer using a straight through D9 male to D9 female lead between the data port on the RSD and an RS-232 port on the computer.
3. The RSD will need to be powered up to be able to communicate with the computer.
4. Once logged into the RSD the operator can click on 'Display Test' , this will test all segments of the RSD simultaneously.
5. The display time can be set from 1 to 4 seconds
6. Click 'Update Settings' to change the settings in the RSD