Station Maintenance Tips

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Tide gauge maintenance

Tide gauges have to tolerate hostile conditions, so regular maintenance is needed to prolong the life of the equipment.
Tide gauge maintenance

Inspections visits should be made on a regular (at least monthly) basis to examine components for external signs of wear, especially after an extreme event.

Items to be checked include:

- GOES & GPS antennae
- Solar panel
- Sensors
- Cabling
- Electronics

Pay particular attention to the condition of outer sheath cabling, which is often vulnerable to deterioration.

Take photographs and keep a written record of the dates, times and checks made.
Check for damage to the antennae and cabling.

Are the fixings secure? These can be loosened by storm damage or high winds.

Are the azimuth and elevation of the GOES antenna correct?

Inspect for perishing or nicks in the cable outer sheath.
Solar panel

Is it securely fixed?
Is cabling in a good state of repair?
Regular cleaning will ensure a constant supply of power to the electronic components
Radar Sensors

If fitted with an LCD screen, this can be used to confirm normal operation.

Cables should be examined for signs of damage or wear.

On an annual basis the unit should be levelled to a known benchmark to ensure no movement has occurred.
Belize Met Service Engineers levelling between the tide gauge and nearby benchmark
Pressure Sensors

Sensors are underwater and therefore hard to check!

Cables and mountings above the waterline should be inspected for signs of damage or wear.

Performance of these sensors can be monitored via IOC website.

Sensors should be removed on an annual basis for inspection and cleaning.

It is important that when the sensors are refitted, they are returned to the same position. This should be checked by levelling to a known benchmark.
Electronics Cabinet and Datalogger

Generally requires very little maintenance

Some dataloggers can store several years’ worth of data but it is good practice to download data on a 6 monthly basis

If a lead crystal battery is used, it should last for ~3-5 years, but voltage should be checked via IOC website

Check for any water ingress to the cabinet and components
Pressure-compensated sensors are vented to the atmosphere via a small plastic tube in the pressure sensor.

This exposes the internal workings of the pressure sensor to moist air, so a desiccant box is used to eliminate this.

Desiccant cartridges should be swapped every 6 months and the old ones placed in an oven for 3-4 hours on a medium heat to reactivate them. These should then be stored in sealed containers until required again.
Tide board

Clean tide boards (if fitted)
A long-handled squeegee is ideal for this
Tide board

Take regular visual readings of the tide board and record these for comparison with data recorded by the logger.

A simple comparison of visual readings and recorded data can be made using MS Excel
Check the IOC website on a daily basis to monitor for gaps or anomalies and to check battery voltage.
Thank you

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