Overcharged

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When a cell is overcharged

- Oxygen gas is generated at the positive electrode
- The sealed nickel-cadmium cell is designed to accommodate the excess oxygen during slow overcharge with no noticeable loss of performance.

When a cell is overcharged

- This is accomplished by building the cell with a negative plate which is not fully charged when the positive plate becomes fully charged.

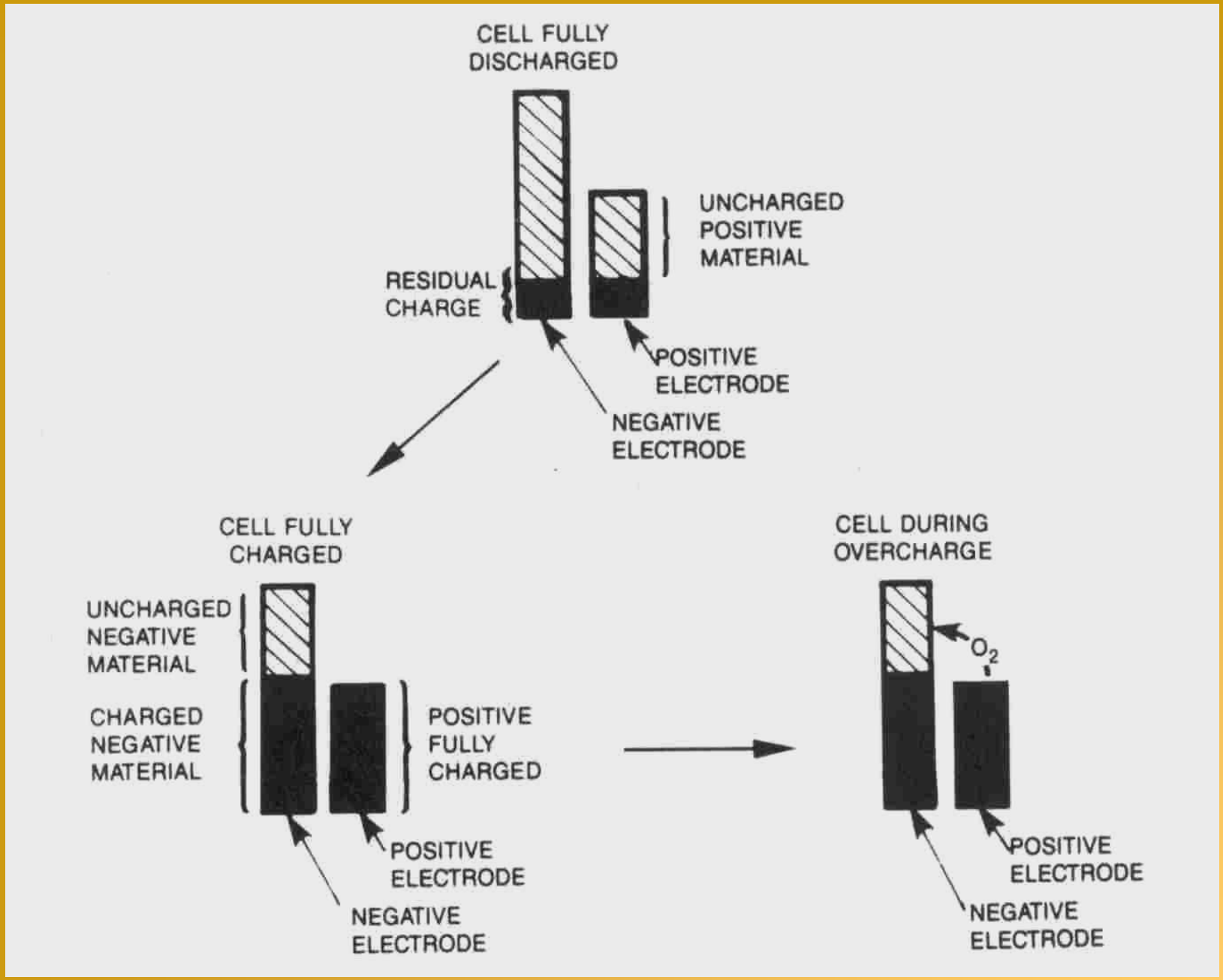
- Inspection of the plates will reveal that the negative plate is physically larger than the positive

When a cell is overcharged

- The excess oxygen quickly passes through the porous separator
- Reaching the active sites on the negative plate where it is recombined from the gaseous state forming hydroxyl ions.

When a cell is overcharged

- These hydroxyl ions then move back to the positive plate completing the circuit.
- In the unusual instance where a cell is overcharged at a higher rate than can be handled by the cell design, a reseal able safety vent will open
- Letting the excess oxygen escape.


CELL FULLY DISCHARGED
UNCHARGED POSITIVE MATERIAL
RESIDUAL CHARGE
POSITIVE ELECTRODE
NEGATIVE ELECTRODE
CELL FULLY CHARGED
UNCHARGED NEGATIVE MATERIAL
CHARGED NEGATIVE MATERIAL
POSITIVE FULLY CHARGED
POSITIVE ELECTRODE
NEGATIVE ELECTRODE
CELL DURING OVERCHARGE
O_2
POSITIVE ELECTRODE
NEGATIVE ELECTRODE