The Advantages:
The sequential method is currently the most favorably used option for ballast exchange for the following reasons:

- It takes less time than the flow-through or dilution method. Only pumping out and refilling of tanks is required. This may be very beneficial when the time spent in the zone meeting the depth and distance criteria is very limited.
- The tanks are nearly completely emptied first and then the ballast water exchanged with ocean water that makes the exchange nearly complete.
- If conducted in accordance with the ship’s BWMP, there should be no extra pressure on the tank structure.
- Other work can continue safely on deck as there should be no overflowing water.
- No effect on the cargo if it is loaded on deck.
- In case of icing conditions, there is no fear of freezing of the deck structures, scuppers or freeing ports.
- No conversion work is necessary and the ships existing pumping and piping system can be used.
- It avoids direct contact of personnel with ballast water.
- It does not compromise watertight opening on the deck.
The Disadvantages:
The sequential method suffers from a number of safety issues namely:

- The empty tanks may increase the shear forces, longitudinal and torsional stress. It may be necessary to reduce the speed of vessel or alter her course to reduce the effect of the seas on the vessel.
- The change in displacement will cause a change in the immersion to bring the propeller and rudder out of the water or adversely affect the trim causing the same effect. This can affect the maneuverability of the vessel.
- The transverse stability of the vessel may be affected by adverse changes to metacentric height and free surface effect.
- There may be significant sloshing of water inside tanks as the vessel is moving in the seaway.
- The stripping of tanks takes time for effective discharge and it needs to be confirmed through tank dips.
- Pump speeds need frequent adjustment in the line starting, bulk, stripping, line flushing and discharge stages resulting in loss of time.
- Frequent line-ups are required – errors in line-ups can cause disruption to the operation and further delay.
- Emptying of peak tanks would adversely affect trim.
- There is extensive pre-planning required to be carried out before each operation. Simulation of operation stages is required to assess transitional periods.
- The bridge visibility may be affected during the exchange stages and would require additional risk analysis with respect to navigation of the vessel.
- The sequential method alters the original condition of stability and deadweight during ballast removal and then restores it during the second stage when the tank is refilled. Any pump or power failure midway during an exchange step, could alter the vessel's original stability condition.
- This method may not be possible to follow in the case of adverse weather conditions.

Source: [http://www.globallast.imo.org](http://www.globallast.imo.org) (Learning portal–Module 2)