Used with permission from the BASDART Course Dr R Glasson And Dr S Chadwick
Adapted by Dr A Norman 2015

Storz Bonfils Intubation Endoscope

- 40cm rigid endoscope
- Distal bending angle 40°
- Outer diameter 5.0mm for ETT >5.5mm
- Paediatric version also available
- Moveable tube holder incorporating O_2 flow connector
- 3 different intubation techniques possible
    - Conventional retromolar technique
    - Lateral access with additional aid of laryngoscope
    - Midline direct access
- No working channel so easily disinfected using Clenil wipes

Indications
Can be used as part of **Plan A,** where laryngoscopy has proved difficult/impossible.
Contraindications
No previous experience
Complications
Failure
Dental damage/oral trauma

The retro-molar technique.

A right handed technique is described

1. Set up the scope system.
2. Position an appropriate ET tube on the scope.
3. The length should be that which allows a very small halo to be seen on the camera screen (new moon effect).
4. The orientation of the tube on the scope should be with the tip of the ET tube positioned anteriorly. This makes the tube more likely to part the cords rather than snag on them (similar concept to rotating a tube anticlockwise by 90 degrees when passing over a bougie)
5. The patient is anaesthetised and paralysed.

6. Lower the trolley to its lowest position and ensure the head of the trolley is flat (no head up).
7. Lubricate the right side of the patient's mouth copiously.
8. Grasp the scope around the light lead connection, rather like gripping a pistol.
9. Place the middle finger of your non-dominant hand in the patient's mouth, on the hard palate. Keep it there until point 15. Use your index finger to open the mouth.
10. Insert the scope into the mouth sideways on, with the tip pointing towards the left cheek and the tube on the right. Advance until the tube touches the posterior oropharyngeal wall.
11. Use your index finger to push the tube-scope combination beyond the right upper molars and hold it there.
12. Now rotate the scope so that it is pointing towards the patient's feet and start to look at the monitor screen.
13. Perform laryngoscopy- look around the oropharnyx with the scope and get your bearings. Often at this stage, the epiglottis is touching the posterior pharyngeal wall. A jaw thrust manoeuvre by an assistant often helps at this stage.
14. Using a combination of rotation of the scope and anterior/posterior angulation (like pulling a pint), advance the scope though the vocal cords.
15. When 3-5cm beyond the cords, disengage the tube from the tube holder and railroad the tube off the scope.
16. Remove the scope, bearing in mind the curve on the distal tip.
17. Connect the breathing system, ventilate and confirm presence of ET_{CO2}
18. Re-insert the scope, this time maintaining more of an A-P orientation. Keeping the tube in view on the screen at all times, advance the scope until the vocal cords are again visualised.
19. Confirm the tube is inserted in the trachea to an appropriate length. Note the length at the teeth.
20. Remove scope and secure the tube.

Tips

- Using a Mac laryngoscope to open the airway with the left hand and a similar technique as above may make the view easier, lifting the epiglottis forward.
- If the scope is allowed to slip out of position from behind the molars, it is more difficult to manipulate the tip of the scope anteriorly enough to intubate, as the scope impinges on the upper incisors.
- A common pitfall is to insert the scope too far when initially inserting and rotating to view the cords. If in doubt, withdraw a little.
- Ensure the tube has advanced 3-5cm beyond the cords before railroading the tube off. It is quite common to attempt to railroad the tube when it is still positioned above the cords.
- Ensure you check the tube position after intubation.