Ivan T Houghton
(*address)*
(*address*)
London
(*address*)

Telephone (*phone*)

Facsimile (*fax*)

E-mail ivanhoughton@doctors.org.uk

FIELD SURGICAL TEAM EXPERIENCE IN DHOFAR

I T HOUGHTON

Brigadier I T Houghton MA, MD, LLM, FRCA

Retired

Formerly
Defence Consultant Adviser in Anæsthesia and Resuscitation to the Surgeon General

Keywords

Field surgical team

Anaesthesia, field, draw-over,

Geographic, Salalah.

Abstract

Major Ivan Houghton was the anaesthetist with the fifth and ninth deployments of 55 Field Surgical Team to RAF Salalah in 1973 and 1975 respectively. He made use of various field anaesthetic apparatuses and he also used the opportunity to test and develop the Triservice anaesthetic apparatus.

The account also describes some of the other activities undertaken and is illustrated with a number of photographs of the teams, memorabilia and equipment.

List of Contents

Table of Figures

After 12 years in the Territorial Army, the last four as Regimental Medical Officer of 23 Special Service Regiment (V), I joined the regular Royal Army Medical Corps in November 1972. After the postgraduate medical officers' course, my first posting was to 23 Parachute Field Ambulance RAMC in Aldershot but I was immediately detached to be the anæsthetist with the fifth deployment of 55 Field Surgical Team sent out under the auspices of 2 Field Hospital RAMC in July 1973. Typically of the time, everybody else seemed to know of my detachment (on the recommendation of Brigadier John Voller[1]) long before me! I had fortunately spoken with Major Malcolm Farrar (? third deployment) and Lieutenant Colonel Tony Booth (anaesthetist with Lt Colonel Bill Thompson) who had also served there who had briefed me informally.

55 FST (Fifth deployment)

Lieutenant Colonel Bill Johnston was the surgeon and Officer Commanding and Captain Mike Sutton was the resuscitation officer. Staff Sergeant Brian Robertshaw was the SRN and senior nurse. He had formerly been a soldier in the Parachute Regiment and had also worked as a graphic artist. It was he who designed the FST's badge (Fig. 1) which was modified by later teams (Fig. 2) and was made by a firm in Liskeard with which he was associated. We assembled at 2 Field Hospital and flew out by Britannia via Akrotiri and Bahrein to Masirah and after an overnight stay flew the last lap in the Andover to Salalah. We arrived in time for the previous FSTs leaving party.

[1] Brigadier J. J. Voller QHS, FFARCS. Consultant Adviser in Anæsthesia to the Director General Army Medical Services.

Figure 1. 55 FST (5)

Figure 2. 55 FST (5) Logo

Autovol Ventilator

At the request of Brigadier Voller, I took an Autovol Ventilator (HG East and Co., Ltd, Oxford), air compressor (HG East and Co., Ltd) and an Oxford Miniature Vaporiser 50 (Penlon Ltd, Abingdon) with me for field-testing.

For general anæsthesia in the mid-sixties, anæsthetic ventilators were finally being accepted as a valid alternative to the 'educated hand' for controlled ventilation for anæsthesia supplemented with muscle relaxants. However, many theatres did not have anæsthetic ventilators and there was a market for a cheap means of ventilation during anæsthesia for such theatres and for private practice which was satisfied by the introduction of the Minivent (Cohen, 1966) and the Autovent[2] (Mushin *et al*, 1980). They served their purpose being minute-volume dividers but were not entirely reliable and control of respiratory parameters was problematic. The Autovol was a development of the Autovent which encased an Autovent and its rebreathing bag in an aluminium box and attempted to give control over the tidal volume. The plan was to deliver an air/oxygen mixture from the air compressor and an oxygen cylinder through the OMV 50 to the Autovol and from there to the patient. The apparatus was made to work using an artificial lung (2L rebreathing bag) but on using it for the first time on a patient, the Autovent valve jammed and the Autovent exploded internally. The RAF engineering flight repaired the damage (mainly panel beating of the innards) but after a few further uses, the same thing happened. I resolved that my report on the machine would be sufficiently adverse to kill the project, which indeed happened, although I had to go to see Colonel Frank Belsham[3] at the Royal Herbert Hospital after my tour in Salalah to explain to his unsympathetic audience why I dared to be so

[2] Introduced 1967 (Mushin *et al*, 1980)
[3] Colonel F. Belsham FFARCS L/RAMC, Senior Consultant Anæsthetist at the Royal Herbert Hospital, later Consultant Adviser in Anæsthesia to DGAMS as Brigadier.

uncomplimentary about the Autovent (nicknamed the ‘Vollervent’). Maybe he had had better luck in BMH Dharan.

Use of haloxair and Triservice prototype

In the year prior to joining the Army, I had been a Senior Registrar at Whiston Hospital and St Helens Hospital (near Liverpool) and I had come up serendipitously with the idea of mating a Laerdal Resusci Bag to an OMV to make a simple and very portable anæsthetic machine and had done a few cases satisfactorily with it. I constructed, therefore, such an apparatus to allow draw-over anæsthesia with spontaneous ventilation. Oxygen was fed in from an oxygen cylinder and regulator to supplement the inspired oxygen concentration.

East Radcliffe Series A respirator

For controlled ventilation, the debacle with the Autovent had left me without an anæsthetic ventilator so I brought back into use an old East Radcliffe Series A (Russell and colleagues, 1956) which was lying around and I created an air-drawover breathing attachment for it and attached the OMV 50 from the Autovol to the air intake.

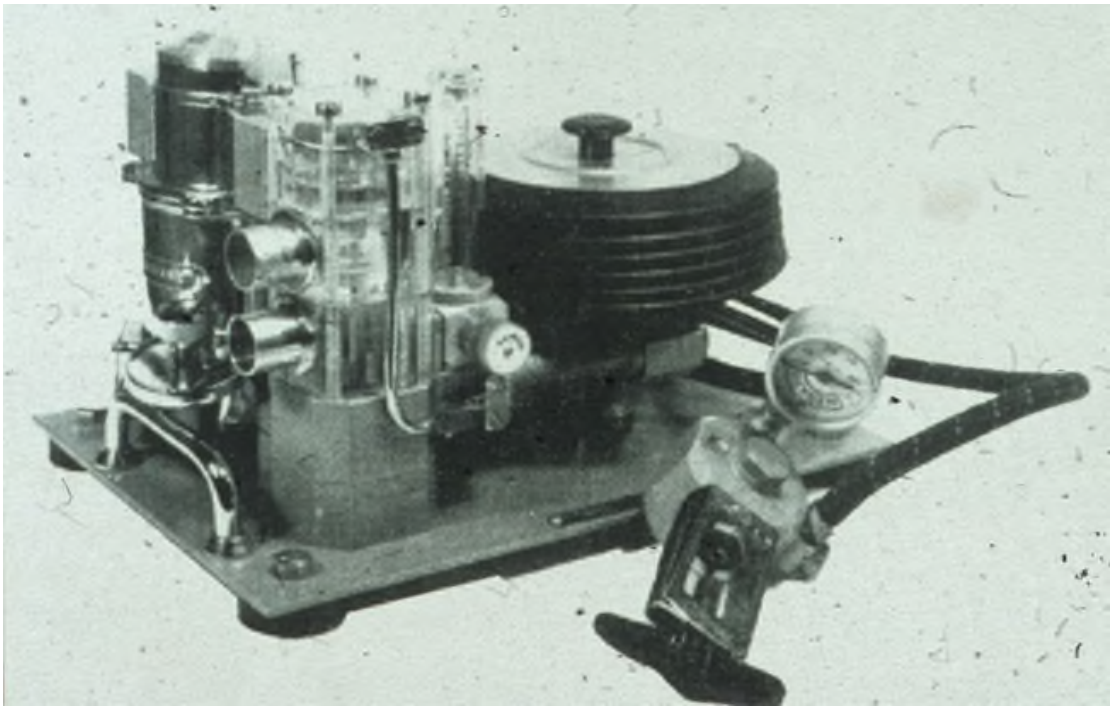

Figure 3. Haloxair anaesthesia apparatus (From Stephens, 1965).

All my anæsthetics in Salalah were performed using draw-over techniques with this equipment or the haloxair (Stephens, 1965a; Stephens, 1965b). There was also an EMO ether inhaler (Epstein and Macintosh, 1956; Leatherdale, 1966) and a Bryce-Smith halothane induction unit (Bryce-Smith, 1964; Holmes and Bryce-Smith, 1964). As a plenum apparatus, there were the parts to make a M and IE Services Transportable Model portable anaesthetic apparatus together with a McErvel tray (McErvel, 1955) and remnants of the Soper portable anaesthetic apparatus (Medical and Industrial Equipment Ltd) presumably of RAF origin (Soper, 1961).

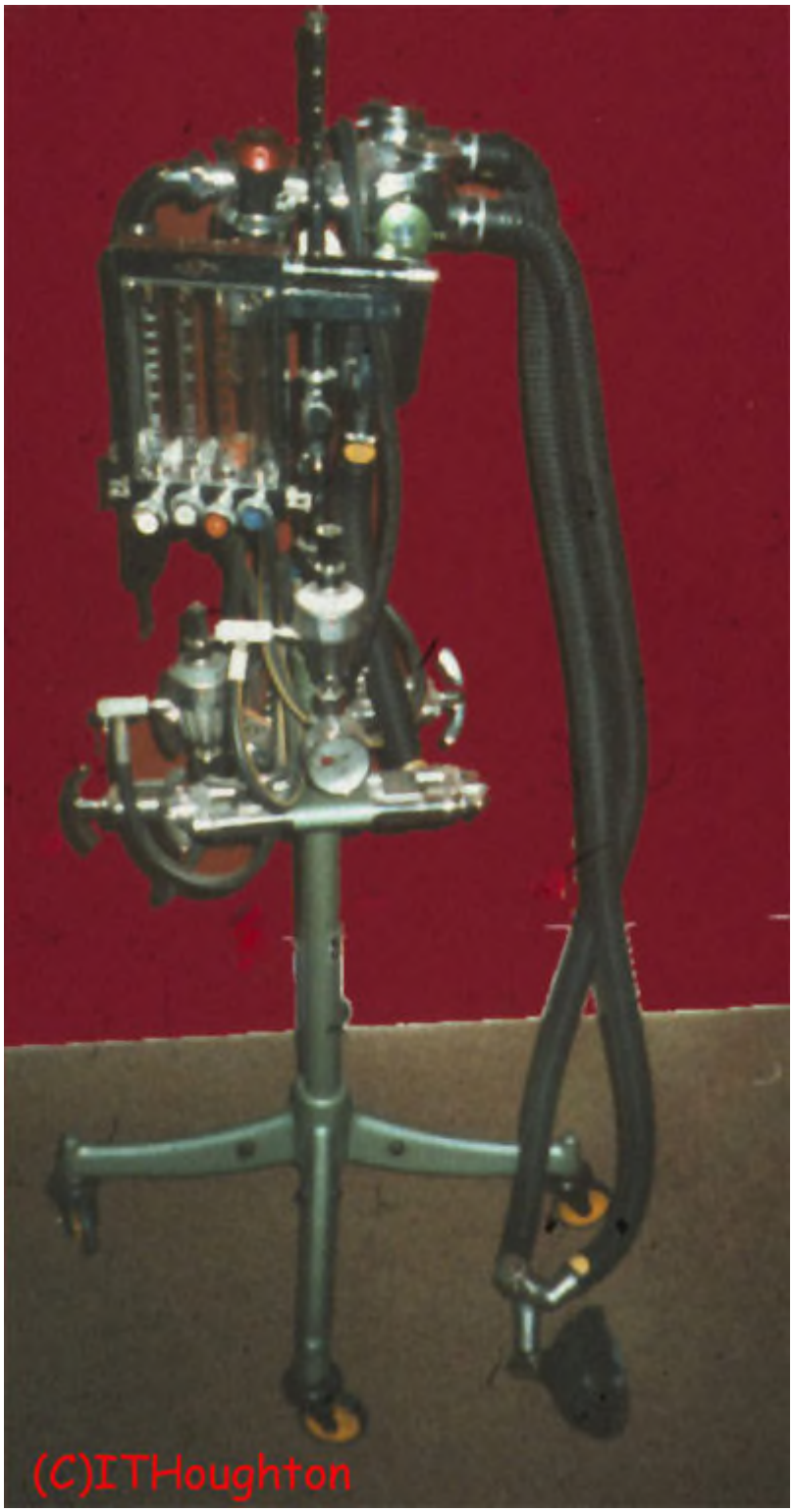

Figure 4. M and IE Services Transportable Model anaesthetic apparatus.

An analysis of the anaesthetics given is recorded in a paper by Knight and Houghton (1981). I kept personal records of all my anaesthetics on my own forms as well as the official service record. Particular note was taken of induction and recovery times as

well as regular blood pressure and pulse readings (Oscillometer, Scala Alternans, von Recklinghausen). No oscilloscope had been issued at that time, other than on a defibrillator that had recently been issued for trial.

During the tour, I did my best to service as much of the equipment as possible and make operational.

After more than thirty years passage of time, my memory of events is somewhat hazy. However, I think that I used to take two sick parades per week whereas Mike Sutton did three and Bill Johnston did one. Surgery was done as necessary and there was usually a trickle of cases to be done. Battle casualties cropped up regularly with the occasional very serious one.

Figure 5. Casevac arriving at 55 FST.

Figure 6. Hedgehog B during the monsoon looking towards the jebel.

Dental Treatment

I also provided the emergency dental service. Temporary fillings were used for British troops to see them through until the RAF dentist from RAF Masirah came up for his monthly visit. Dental extractions were performed for local personnel or contractors. The extractions were usually done under general anaesthesia, helping to disguise any shortfalls in experience and technique. Fortunately there were no major disasters.

Figure 7. Gardening at the FST.

We made good use of the excellent swimming pool and regularly used to run around the track as well as play volley ball and visit the beaches. However, within two or three weeks, the monsoon arrived and the beach was much less attractive. The rain made the desert fertile and we spent quite a lot of time creating a garden and improving the environs of the FST. I used to take the opportunity during quiet times to visit most of the outside locations on the jebel either by helicopter, Skyvan or Caribou.

Figure 8. Skyvan on the jebel.

We were always made very welcome and were given honorary membership of the Taylor Woodrow Club as well as the Airworks Canteen on site. Visits were made to the local hospital, the Royal Salalah Hospital and movement was facilitated by the prior gift of a Suzuki miniature four wheel drive SUV that ran on fuel from the Sultan's Armed Forces petrol pump and, therefore, was not so tied up in red tape and vehicle work sheets as the RAF vehicles.

Figure 9. Ivan Houghton by the Suzuki.

MO BATT

Major Tom Graham, a pædiatrician, was the medical officer on detachment to the British Army Training Team at the SAF camp at Um al Guariff and we also were made very welcome and helped by the senior medical officer of the SAF in Salalah, Major Medhi.

The monsoon began to lift towards the end of our tour in Salalah and after four months we returned to England and our units.

56 FST Northern Ireland and Triservice anaesthetic apparatus

My emergency tour for 1974 was to Musgrave Park Hospital in Belfast with 56 FST. There, I continued trials into the Triservice apparatus. This time, I had the prototype

of the Triservice vaporiser. The vaporiser had prototype fold-up feet (completed as a Penlon apprentice's passing out piece). It combined the body of an OMV 50 with the mechanism of the original OMV but with the direction of flow reversed. It was here, in Belfast, that I met my future wife, Teresa Wan, who was the theatre sister with the FST.

SAS Selection and 55 FST (Ninth deployment)

I had volunteered for service with special forces and it was agreed by the Army Medical Directorate that I should do 22 SAS Selection in early 1975 followed by the continuation training. However, in the meantime, the para FST of 23 Para Fd Amb was chosen for service in Dhofar. I felt that I should accompany them, so I went out to Salalah a couple of weeks after the rest of the team (my unlucky predecessor having to wait behind until my arrival) having completed selection but not doing the continuation training.

Figure 10. Rhayzuit harbour 1975.

Figure 11. Logo of 55 FST (Para 1975).

Major Campbell Macfarlane was the surgeon and Major Mike Rapley RADC was the resuscitation officer. It was a great help to have a dentist able to develop this side of the practice.

Figure 12. Major Cambell Macfarlane and Major Mike Rapley at Rayzuit.

Once again I undertook three sick parades and also took responsibility for camp hygiene. The problems were exactly similar to those found by Captain Mike Sutton two years previously and hardly any progress had been made.

This time I took out the two pre-production models of the Triservice vaporisers, an Oxford ventilator modified to take the Triservice vaporisers and an air compressor and filter. MOD had agreed to buy the vaporisers and the ventilator and compressor were on loan from Penlon Ltd (Houghton and Knight, 1982). The draw-over equipment worked very well and the cases were written up in the report cited earlier (Knight and Houghton, 1981). The equipment design and trial was published as a paper (Houghton, 1981).

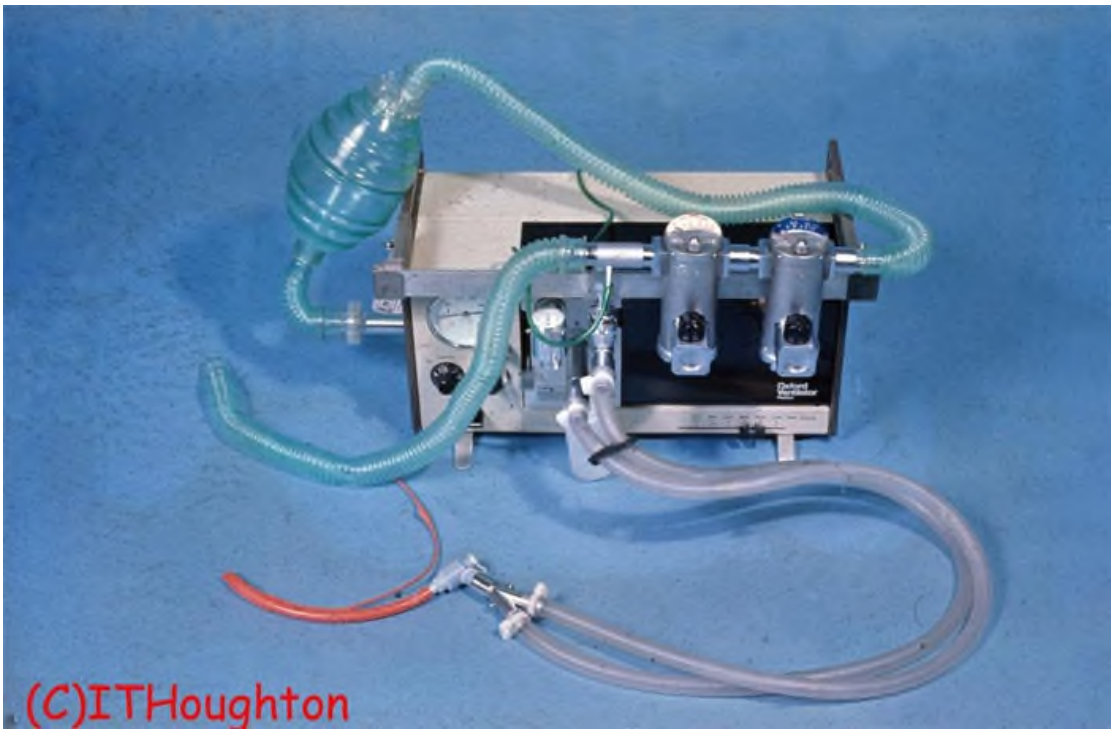

Figure 13. Prototype Oxford ventilator and Triservice anaesthetic apparatus.

The accommodation was much better this time round with newly-built air-conditioned en suite rooms. The FST had more buildings and a dedicated reception area. The mess had now been enlarged and improved with SAF responsible for its running.

The former RAF mess photographic portrait of HM the Queen in the robes of the Order of the Bath was found in Mike Rapley's room so this was ceremonially hung above the door of the casualty reception area. We then set about getting pictures of HM Sultan Qaboos bin Said bin Tamur, HM the King Hussein of Jordan and His Imperial Majesty the Shah of Iran from their respective embassies or (for Oman) the media services. We then had one picture per wall for the appropriate casualty and we even were able to 'lend' the Queen's picture to the Mess for RAF Mess Dinners! Our mortuary also doubled as the high capacity beer cooler for larger parties.

Figure 14. Flag of 23 Para Fd Amb flies above the FST.

The previous team had adopted a stray dog ‘Bondu’ and we continued to look after him until he was killed in an RTA.

Figure 15. 'Bondu'.

Other visits to Dhofar

I returned to Dhofar a couple of times in the next year or so as I was posted to 22 Special Air Service Regiment as Regimental Medical Officer immediately after my return from my second emergency tour of Salalah. However, this time, I was not with the FST but I was accommodated in Um al Guarif and my territory included much of the jebel.

I continued to work on the scaling of the Triservice anaesthetic apparatus and it replaced the Haloxair for all three services during 1976.

Figure 16. Major Ivan Houghton with Triservice apparatus (1976).

In all I enjoyed my time in Dhofar and I hope that in some small way, I contributed to life there.

References

Bryce-Smith R. Halothane induction unit. *Anæsthesia* 1964; **19**: 393-398. 10

Cohen AD. The Minvent Respirator. *Anæsthesia* 1966; **21**: 563-568. 8

Epstein HG, Macintosh Sir Robert. Anaesthetic inhaler with automatic thermo-compensation. *Anæsthesia* 1956; **11**: 83-88. 10

Holmes C McK, Bryce-Smith R. Halothane as an induction agent. *Anæsthesia* 1964; **19**: 399-407. 10

Houghton IT, Knight RJ. The Triservice anaesthetic apparatus: some answers. *Anaesthesia* 1982; **37**: 779. 18

Houghton IT. The "Triservice anaesthetic apparatus. *Anaesthesia* 1981; **36**: 1094-1108.....18

Knight RJ, Houghton IT. Field experience with the Triservice anaesthetic apparatus in Oman and Northern Ireland. *Anaesthesia* 1981; **36**: 1122-1127. .....11, 18

Leatherdale RAL. The EMO ether inhaler: clinical experience in a series of a thousand anæsthetics. *Anæsthesia* 1966; **21**: 504-511. 10

McErvel T. An instrument tray for use with the M and IE Transportable anæsthetic machine. *Journal of the Royal Army Medical Corps* 1955; **101**; 62-64. 10

Mushin WW, Rendell Baker L, Thompson PW, Mapleson WW. *Automatic Ventilation of the Lungs*. Oxford: Blackwell Scientific Publications, 1980 3rd edition. 309-311. 8

Russell WR, Schuster E, Smith AC, Spalding JMK. Radcliffe respiration pumps. *Lancet* 1956; **i**: 539-?. 9

Soper RL. Portable anaesthetic apparatus with vaporizer of new design. *British Medical Journal* 1961; **ii**: 703-704. 10

Stephens KF. An assessment of the role in developing regions of halothane anaesthesia with air as the carrier gas. *Journal of the Royal Army Medical Corps* 1965a, **111**: 203-210. 10

Stephens KF. Transportable apparatus for halothane anaesthesia. *British Journal of Anaesthesia* 1965b; **37**: 67-72. 10