Best Intentions

Memories of an emergency physician

I was active as a physician in prehospital emergency medicine in Germany from April 1981 to September 1996, during which time I participated in almost 2000 missions, partly with a mission car from home or hospital, partly with helicopter. Although this work gained central weight in my interest and medical publications (in the first line my book on "Prehospital Emergency Medicine"), it was of secondary importance to my work as an anaesthetist. Since March 1982, I was occupied as a consultant at the department of anaesthesia in Lörrach County Hospital. Having dropped this fascinating job, I have taken the advice of my good friend, Dr. Gregor Jemec, to describe some of my experiences in the rescue service. The following description of 45 missions as they took place are particularly enlightened of the consequences they became - or should have had.

Best Intentions contains the following chapters

Figure 1: The missions took place in Lörrach County and neighbouring areas (Germany, Switzerland and France), here a sketch in Danish:

In the Shadows of Death

(1) I rushed out in the small turnout car and found myself 10 minutes later occupied with the ritual resuscitation of a miller - ritual because the mill was situated too far away from Lörrach to enable any success, in particular while nobody (as usual) had laid hand on the miller after he suffered cardiac arrest until the ambulance came, almost simultaneously with me. It would have been too complicated to discuss such matters with the relatives who, on the contrary, often expect a certain cardiopulmonary resuscitation [**CPR**] carried out, so it is easier to do so, even if it occasionally appears theatrical. This is the last honour which is carried out, and it can be done more or less energetically. Less, if the procedure is ended within some fifteen minutes, more if it takes much longer and results in the admission of the non stabilized patient in a hospital, enabling the relatives more time (up to several weeks) to prepare for the coming decay. Please do not think that I am ignoring that some people survive their prehospital cardiac arrest but these patients are found under different circumstances, to be recognized rather fast by the professional, and then it is unfair to speak of any ritual.

But back to the miller. This time it lasted seven minutes, then he had received his endotracheal tube, cardiac massage, electroshock with or without medical reason and I had placed a central venous line, a matter of exercise. During this time I also experienced that the poor man was a mere invalid due to cardiac problems after his second heart attack. The relatives would recognize that it was the best for him if destiny's advice would be followed, where after I with a deep voice announced that now, exactly now, it was all over, that the patient had not suffered under our rough therapy (at least, that was true) and whatever you use to say on such occasions. And then it happened that the widow meant that we deserved something extra for our trouble. The ambulance men and I each received a sack of flour, the natural product of the mill. Driving back towards Lörrach, I was soon forced to stop as I came to think of an old Danish saying (meaning: one person dead, the other person's bread) and my reaction to that was not compatible to traffic safety.

How does one turn our to become so rough? It is probably a necessity in order to carry out this profession that its sad aspects are isolated in order to practice some humanity on other occasions. Partly, it is also a consequence of the exaggeration of CPR, not to be understood as a complaint against the relatives who, until a few minutes ago had made no thoughts that their dear one would soon have a rendez-vous with death, and probably a permanent one. Of course, I have always been deeply moved by dead children, but even in the cases of cot death did I avoid admitting the children to a hospital since the babies, in contrast to most adults, had usually been dead for hours when they were finally found, and that was possible to establish. Among those whom I believed might have a chance and therefore admitted to hospital, about one quarter survived, 1-2 annually (more after a new resuscitation principle, see later). This is in contrast to most emergency physicians who tend, once CPR is started, to admit most patients to a hospital (often under continued cardiac massage during transport), to a prolonged death and hardly more often to their survival.

So even when this behaviour may appear theatrical - as any ritual in fact is, - then there really is a humanistic aspect associated with it, in not pretending that there is something to hope for. Most of the patients had lived their life before and, had it been possible to discuss it with them, would prefer to abruptly rather than go slowly, through a prolonged intensive care therapy, even in cases where there was a faint chance of survival. In other cases, time was up against any attempt, or the passive spectators should have been active before we arrived. And then there were those who just had enough of life, without being able to bring it quite to an end before we arrived. How would you have reacted in my place in the following case?

(2) It was just nearby and I arrived simultaneously with the ambulance. The police was already there - in fact, they had required us, and then there was the wife who had called the police. Her husband had shot himself in the head with a large calibre gun, in the temporal region, just as they do on film. What they do not show on film is, that this is a stupid direction, sometimes "just" causing blindness and rarely death immediately, if at all. But this was a large gun and a part of the cranium and the brain was missing. Unfortunately, the man was still alive and the paramedics prepared for an intubation (a tube leading down to the airways, securing these against aspiration of gastric contents and enabling artificial ventilation). His wife told me that her husband suffered a lung cancer in a progressive stage, causing pain and breathlessness, and this was confirmed by letters from a hospital. Having read this, I declined making any intubation. The paramedics were surprised, knowing that I had a low threshold for

performing this measure, but then wanted to prepare evacuation and transport. That, too, I declined, saying we should just await what happened with the comatose and steadily bleeding man. Not being familiar with doing nothing, one of the paramedics fled down to the waiting ambulance while the other stayed. It lasted 18 long minutes before the poor man finally died, and during this time could I ponder about how much more easy it would have been just to deliver "maximal therapy", as most emergency physicians would probably have done. Indeed, I should easily come into trouble if any of the persons present had attempted a forensic process against this passive behaviour - at least, here I found understanding.

I had several encounters with shotguns, though always in connection to suicidal attempts, of which other two shall be reported. This gave me some experience with the various calibres, although you could never quite know what came out of that.

(**3**) I was on my way home with the turnout car as they told me that the police had seized a house where a man had threatened to shoot himself. They negotiated with him, mediated by another doctor, but in case of a shooting they would appreciate the presence of an emergency physician. I stopped the car nearby and waited for a quarter of an hour but then decided that "the dog which bells does not bite" and still, if anything happened, they could call me from my home which was not so far away. The following three hours seemed to confirm my prophecy but then the man suddenly ignored the ancient proverb and shot himself in the head, the same route as describe for the previous mission but with a small calibre gun. The patron had not enough force to penetrate the second wall of the cranium and was instead reflected. I came, saw and intubated, then transferred the patient to the University Hospital of Basle where the nearest neurosurgical department was situated. Although Basle is situated in Switzerland and thus "abroad," it is the biggest suburb to Lörrach (or reverse) and we have an unproblematic co-operation with their hospitals and, in particular, with the trauma centre when seriously injured persons are dealt with. In this case, a computed tomography [**CT**] was performed. The neurosurgeon showed me the CT-recordings and told that the patient would probably not survive this massive brain injury - besides, they did not intend to perform a big operation upon a patient who just tried to commit suicide (something the Swiss doctors have always expressed clearer than the Germans who do not appear to know any limits what big dubious projects are concerned), so would we be so kind to transport the patient back again, then we could clarify the formalities in Lörrach. It sounded plausible and was carried out as suggested, with the important exception that the patient did not suffer any brain death. In the end, the patient was discharged to a nursery home with serious brain damage after having contradicted the prognosis for the second time. We may be as good as mediocre medical doctors but quite miserable as prophets.

(**4**) And then I have also met a real murderer. It was a rather prejudiced encounter, he was dead as I met him. He had just shot himself with a large calibre gun while his car was still moving and only later stopped by some bushes. This time, the direction of the shot was beyond any criticism and it caused the desired effect almost instantly. I arrived ahead of the ambulance ("the furniture van," as we call it, referring to its luxurious equipment and speed when climbing a mountain of which there are so many here). Beside the car were some unshaven men with a primitive outlook. After having determined the death of the culprit in a few seconds, I told them: "Please step aside, gentlemen, the police will soon be here!" They all laughed and one of them kindly told me: "We are the police." Later I was told that the suicidal victim had murdered two women in advance, now was persecuted by the police and driven towards a road block. Recognizing that further escape was impossible, he left the road and used his weapon against himself.

(**5**) Upon another occasion, it was not the murderer but his victim I met, who had been stabbed and lied in a pool of blood. He was already dead as I arrived and a brief, colourful resuscitation attempt ended with the recognition that aorta had been hit by the knife. Since it was at first not obvious, who had delivered this fatal strike, I tried to help the police by limiting the scope of possible culprits: "It is certainly none of our surgeons, I have never seen any of them working so fast with a knife!" Proudly I can announce that I proved to be right, when the murderer was arrested 2 days later.

(**6**) Again, I must pray for excuse for a tough behaviour, developing with an increasing occupation as emergency physician, but it was difficult not to smile a bit after having informed the vainful end of a resuscitation attempt in the middle of the night to the young, lightly dressed lady who then, shocked by the information, answered, "Oh God, then I shall have to call his wife."

But enough talk about the dead ones. Fortunately, we were predominantly dealing with living subjects and rather often in a successful manner; that is, if you do not understand "success" as necessarily "life preserving", which is a quality that is impossible to measure. The dead ones (e.g., after accidents) would probably have been dead all the same and we were by far not responsible for all survivors, although I am sure that there were cases in whom exactly our therapy was responsible for the difference. Most importantly- and that one can demonstrated, - is that it was almost always possible to remove any feeling of pain and respiratory distress, *also* among those who could not be saved. Unfortunately, my attempt to let the emergency physicians classify what they are doing (and thus moving therapy into focus) instead of the degree of severity of injury or disease (diagnosis) has largely failed.

(7) Another experience from the stabber's world deserves mention: I had once been able to talk one out of an attempted suicide by a long knife, accepting certain compromises not to be revealed here. This tactic failed the next time I tried it. Whether I had said something wrong or not, I do not know, but all of a sudden the man violently stabbed himself in the stomach. The police officers present immediately overpowered him, while I left it for them to fight alone. Afterwards, I was performing an anaesthesia upon the severely bleeding man, a strange feeling to treat a patient fixated in handcuffs. We were in a hurry and the hospital not far away, so I did not inspect the wound further, which we had simply closed with a dressing. As we arrived, I explained the observed "hara-kiri" to the admittance physicians. However, after having found that the wound was rather superficial, one of them answered: "This can only be carried properly out by the Japanese!"

New methods' incidental appearance

(**8**) It is more easy to care for seriously traumatized patients in anaesthesia and early ventilation improves the prognosis of these patients, which explains my affinity to intubate responsive trauma victims. In a personal study of my anaesthesia techniques, 76 of 227 intubated patients without cardiac arrest were not comatose. By a serious traffic accident with several injured persons, it was in particular an elderly man who was multiply traumatized, and he was already moved to the ambulance as I arrived. I asked one of the paramedics to survey the other patients while the other one should prepare the old-fashioned anaesthetic, *thiopental*, which I then (1983) still used for induction. The man was obviously nervous as he tried to carry out the order, his back to the patient, so I decided not to ask any further questions. I caught view of another anaesthetic, *etomidate* and injected that through an i.v. line which was obtained immediately after my arrival. Then I intubated the patient and secured the tube. Only then did the paramedic turn around and offered me what had been left of the projected 20 ml of thiopental – exactly 8 ml. Call me arrogant if you want: I took the syringe, thanked, pored it out on the street through the open door and was simply happy that he had not disturbed me for so long time. In the future, I only utilized etomidate to avoid any delay of the intubation - only gradually did I recognize the other advantages of this drug for prehospital use. Fortunately, none of the other trauma victims needed my help, so that I could concentrate on this man, who survived his serious injury after a few days of ventilation. Also other new techniques can be referred to singular emergencies:

(**9**) I was called to an occupational accident: in a deep pit, one earth wall had suddenly tumbled down and partly buried two workers, who both of them broke a leg on that occasion. One of them was freed rather easily, so I established an iv. line on him, injected a pain killer (analgesic) and let the firework bring him up with their rescue sledge. The other man was buried to the middle of the chest and complained of strong pain under the right knee [Figure 2]. I realized that it would be easier to liberate him in an anaesthesia, which at that time included the intubation for emergency patients. This was prepared for and the analgesic and etomidate was injected, but then one of the firemen came to me and said: "Please hurry up, doctor, I am afraid that the other wall will also come down soon!" I had no intention to share the fate of the partly buried man who was, therefore, now simply taken vertically up under his shoulders, anaesthetized but without the tube. It is indeed easier to work on a patient who does not scream. He was placed on the rescue sledge and the pit fast emptied from people. Now, on safe grounds, I could have continued my anaesthesia but the rough liberation had straightened the broken leg, so I let the man wake up instead.

Fig. 2: The first ‚Pirate Anaesthesia' (9)

Afterwards I raised the question, why not utilize this method somewhat more often. It was a matter of avoiding vomiting and, simultaneously, keep the natural respiration upright for about five minutes. This was the first "pirate anaesthesia," to be followed by many more in- and outside the hospital. I chose this name to express that the method violates all rules and can be carried out on high sea, if necessary during the battle. Of course, a certain risk remains for this method in acute cases but the risk of an intubation is probably bigger. Only a few drugs can be combined with etomidate to produce the desired effect, and this lasts but 4-5 minutes. Unfortunately, I have steadily found my colleagues modifying the method without first understanding its delicate preconditions. Superficially, it appears so easy, that is the dangerous part of it.

At least, the prehospital use of "antagonism" (the use of certain drugs, *antagonists*, in order to abolish certain drug effects) resulted in one of the rare discussions with the colleagues. Here, my recommendation to wake up some of the intoxicated patients with the new drug, *flumazenil* , instead of intubating them, was violently contradicted at a larger symposium in 1987. There was only one person supporting me while one of the others mocked: "Mr. Schou, if you cannot intubate, perhaps it is better not at all to take part in the rescue service." A few years later, and quite contrary to the presentations at that symposium, nobody could remember that there was any other use of the drug than to relieve an intended or accidental overdose of a certain group of drugs, *benzodiazepines*, and now they cannot remember that I mentioned it then.

(10) One of the first patients we decided to wake up was already then known to abuse whatever drugs he could get hold of (plus alcohol), in addition he was feared for his aggressive behaviour when he was awake. Now he had, among others, ingested benzodiazepines and he was deeply unconscious with impaired breathing. I decided to remove the influence of these drugs by using flumazenil and the first cautious dosage did provide useful results. But then we remembered that it was better not to wake up the comatose man completely and, just to be on the safe side, he was attached to the stretcher with various straps before he received the second dosage of flumazenil. In a comparatively awake and still calm condition, he was delivered in the nearest hospital, from where he escaped 3 hours later. On that occasion it became evident that the antagonists could act "too good," tempting the doctor to avoid certain detoxification manoeuvres at a time where this would still have been possible.

Then we continued against the alcohol, by far the most frequently abused "drug" and met in the field in the most different emergencies. It can certainly not be taken to my credit that the ancient drug *physostigmine* , known since 1864, can be used against alcohol intoxication as well as against numerous other (real) drugs.

(11) A young man had swallowed a large amount of benzodiazepines and drunk a whole bottle of vodka. When I arrived, the paramedics ventilated the man with bag and mask, he was unconscious and rather cyanotic (blue discolouration of the skin indicating lack of oxygen), indicating that this was a case not calling for antagonism, but this is where human aspects were given some importance: the man lived in the fifth stock without any lift and I had pain in my back. I therefore decided at least to try waking him up, so that he could walk down himself. He started to breath after flumazenil and gained a better skin colour but remained

comatose, probably a consequence of the alcohol. Then he was given physostigmine, upon which he woke up some minutes later. Still somewhat blurred, he walked down the long way to the ambulance, supported by the two paramedics. There is, however, a regrettable adverse effect to physostigmine: it brings movement to the stomach. Without any warning, but now on the stretcher of the ambulance, he suddenly vomited a large see of stinking gastric contents over one of the paramedics. I laughed over it and ‚comforted' him by saying, "Jetzt wissen Sie was es bedeutet wenn Jemand sagt: ‚Du kotzt mich an'" [now you know the meaning of the old speech, ‚I could vomit over you']. The patient turned against the sound – and gave me the rest.

(12) In the middle of the night, I was called to a man about whom it was claimed that he had fell out of the balcony at the third floor. He was comatose, with an intense smell of alcohol, but not really injured as one would expect after such a deep fall. While establishing an iv. line, I asked if actually anybody had seen him fall, but this was denied. I suspected that he had taken the stairs down below the balcony, where alcohol had then brought him to sleep, so I decided to try to wake him up and ask himself about it. Indeed, he woke up rather promptly after physostigmine and could then give proper information: Yes, he had drunk a lot of whisky and yes, he fell out of the balcony, but being a routined parachuter, he knew how to land too avoid worse injuries. Upon this information, we found it better to take him to the hospital, from where he was discharged the following day without offering any further problems.

The third antagonist which we introduced was *nalbuphine*. We did not need to introduce it into prehospital care where it has long been preferred as an analgesic (i.e., for pain therapy) by many rescue centres because it is more safe (but perhaps also less effective) as other opioids - indeed, it is my preferred sedative and analgesic to patients of severe chronic respiratory distress. However, for opioid antagonism, doctors have long preferred another drug which in all aspects (too short a duration and a high amount of adverse effects) is inferior to nalbuphine when given to drug addicts. The strange thing is, that most colleagues still prefer the inferior drug. Indeed, the sedative (sleep inducing) properties of nalbuphine, augmented by a cautiously dosed and later given benzodiazepine, is one of the techniques we have taken into the hospital after having developed it prehospitally, among others for gastroscopy. It was the manufacturer itself who "killed" their own drug in recommending it for analgesia after anaesthesia with too high opioid doses. Since antagonism overweighed analgesia and other analgesic mechanisms had been blocked by the high opioid doses, patients woke up screening and the anaesthetists agreed that it was a bad analgesic – without understanding the complexity. In the *absence* of other opioids, the drug acts differently and even later application of the other opioids leads to an additional, though weaker effect. Difficult to understand? Well, also the anaesthetists have failed to cope with it.

(13) One yuppie was found at home comatose with a lot of different drugs but neither flumazenil, nor physostigmine produced any awakening effect. There were no vacant respirators in Lörrach county and as I was forced to intubate, I had to admit the patient to Basle. For anaesthesia (regardless of the level consciousness since it serves the purpose of making the intubation itself safe) I use a combination af nalbuphin and etomidate, and this served its purpose as usual. However, on the way down to the waiting ambulance, the now intubated patient woke up and proved rather difficult to keep calm. Of course, they could not understand in Basle why this awake patient had been intubated at all, so they removed the tube at once. Only on a later occasion did the police explain that also an opioid had been antagonized on this occasion.

(14) This antagonism has now become a standard therapy for the treatment of drug addicts in our area: I was called by the paramedics to a village 10 km away in the beginning of the night. Having stumbled out of bed and down to the turnout car takes some time, and as I reported over radio, one of the paramedics told that this was probably a drug addict and we agreed that he would inject a vial of nalbuphine intramuscularly. A few km later they told me that the patient was now awake and I could return – which I refused; having been woken up, I preferred to drive the last few km. It is anyhow difficult for the paramedics alone to decide that a patient should not be admitted, so in this case you may see my justification in avoiding an unnecessary transport and hospital stay; it then remains difficult to explain the social security that they still have to pay for this mission, they seem to prefer an intubated patient on the intensive care unit.

(15) One of my colleagues refused to believe that it could be so uncomplicated to wake up the drug addicts. Called to one of these with a serious overdose, he intubated and ventilated the

patient, took his time to find a vein still permitting an iv. line and transported him to the hospital. In the emergency room, the other antagonist, *naloxone*, was injected. The patient was instantly awoken and regained forces, which he used to drag out the tube and iv. line. He beated the nurses and destroyed part of the equipment after which he escaped from the hospital, leaving only scars, wounds and a deep impression. Exactly one week later, the same colleague was called again to the same patient in the same condition, but now he had got the message: nalbuphine was injected in a muscle while the patient was ventilated on a face mask, possibly an additional dose was given in a neck vein if any (without providing for an iv. line), then the man awoke slowly and peacefully and disappeared without any transport.

In the enthusiasm for antagonism, one should not forget that there are cases where this should not be utilized. Of course, it did not always work as intended, but most intoxicated patients were only found after many hours when an injection for test could be tried. Then, however, there were some cases which demanded fast (gastric) elimination as fast as possible.

(**16**) A 14 year-old girl had swallowed a long acting benzodiazepine - in itself an indication for antagonism through flumazenil - but also an insecticide in a larger dosage. When I saw the bottle, I immediately decided for intubation, although the girl was still responsible and required anaesthesia for making this possible. Thereafter, a thick stomach tube was placed with intermittent aspiration of the stomach content and injection of medical coal in tap water. As usual for such missions, the ambulance suggested a coal mine accident, but it turned out to be worth the trouble: the girl had ingested 25 times the mortal dosage of the insecticide. The elimination of the poison was continued in the paediatric department and the tube could be removed the day after with the respirator, when all danger to the girl's life were proven to be abolished.

Could they have been saved?

My compatriots, the Danes, believe that German motorways (highways) must be the leading source of occupation for the ambulances and accounts for the air rescue, of which the country of 400 islands in the North is not in a possession (leading to the conclusion that it is also not necessary). Indeed, all European rescue services are more often dealing with non-traumatic than traumatic conditions and even among the latter, highway accidents are rare. In our study [see publications 1.29] , utilizing a statistic of the police from 1980 to 1996, only 20 of 430 traffic accident fatalities were found on the two motorways in our county, including 3 pedestrians who were not supposed to be there. In my own 15 years, I have been called only four times for serious accidents on the motorways. Two of these missions are described in the following. First a serious accident occurred in the middle of the night, and the one who caused it was in possession of the three typical features characterizing such accidents: alcohol abuse, high speed and no safety belt.

(**17**) On the highway A5 in direction North, shortly before the deviation to Mulhouse (France), a serious accident was reported: a "ghost driver" had collided with one or more cars and I was required simultaneously with two ambulances. A bit too late, a drunken driver had suddenly noticed that he was approaching the French border (then guarded by customers) in contrast to his intentions to go South. Probably, he also did not want to open the window at the border and then turned and took some way back. Indeed, he went South, but on the wrong lane and his driving was short. I overtook the first ambulance early and arrived first at the spot, a deed not to be recommended since you feel solemn if you are used to get any help. Being unable to survey the accident immediately, I saw one patient trapped in a car, comatose with impaired breathing. The patient was dressed for the winter so, without wasting time in searching for an IV line, he was intubated through the side window. This was successful and would have to do for the first while I went to the next patient who was screaming some 100 meters away. In the meantime, one ambulance had arrived and I gave them orders of requiring out helicopter (which also flies in the night) and take care of this man.

The screams came from a man who was seriously burned. Firemen had arrived and turned the fire of his burning car wreck out, but nobody had dared using the water for the injured man (the importance of simple water for burns is not understood in Germany). When finally persuaded, a terrible smoke came from the man's clothes, indicating that there had still been glows. I found a vein and gave an anaesthetic drug called *ketamin*, realizing that such a

widespread and deep burns injury could not be taken care of with water alone. One of the firemen were told to keep the infusion bottle and another to add water from time to time. Then the police led me to the third and last victim, a young women, whom I could not help as she had died instantly.

I ran back to the first patient but now the second ambulance from Müllheim arrived with another emergency physician. We agreed that he should take care of the "first" patient who seemed stable and should be driven to Basle while I flew the patient with 95% burns to Zürich, one of the few burns centres in Europe where he could survive his trauma. Coming back to him, I discovered that the man who should keep the infusion bottle had stepped one meter back, thereby removing the precious IV line, while the one who should have provided for surface water had disappeared completely. My only chance was now to establish a central IV line through burned skin and then sew the new line to avoid repetitions.

With the liberation of the first patient, the situation was completely altered. He was showing signs of internal haemorrhage and shock. My colleague therefore suggested a change in priority, to which I agreed. Only fast operation could save this man, while the chances for the other, even in Zürich, would be very small. To permit liberal use of anaesthesia, also this man was now intubated. Then they went off in direction Freiburg while the helicopter landed. We flew the man to Basle but he died shortly after during an emergency operation, while the burned patient died the following day. Nobody survived the big accident, so what was the point of being there, you might ask?

This is a good example to show that we are not only dealing with saving lives. The patient with serious burns did indeed profit from anaesthesia in being relieved from his terrible pain. I believe now that I could at least have controlled the other patient's intra-abdominal bleeding – typically being expressed after he was no longer compressed in his car – by a method, to be described in the following case-report. But two other comments are important: we altered the priority when the condition of the first patient deteriorated; and it proved to be him who had caused the accident (most accidents are not just *happening*, they are *caused*, as my friend Dr. Chockalingam (of Madras, India) once stated), not the other one as had been told. Not that it really mattered, but it is a small lesson for emergency physicians to deal with accident victims as patients only and leave it to the police to decide about, who was guilty and who was the victim.

I mentioned the statistic of accidental death from the traffic police. I was involved in 60 of these cases, of which exactly 30 died on the spot (excuse the round figures, but that is how it was) while three were seen only during secondary transport (i.e., from one hospital to the other). Of the remaining 27 victims, 13 were not instantly comatose and 9 of those died shortly after admission; 2 of them from thoracic injury, against which we are currently helpless, but 7 patients had an intra-abdominal bleeding. All these patients were recognized to be in haemorrhagic shock and all were brought to a trauma centre (5 to Basle and 2 to Freiburg) without any delay. So, having eliminated other, previously common causes of accidental death (suffocation, pneumothorax and spinal destabilization), a quarter of my patients could have been saved if the intra-abdominal bleeding had been controlled. Indeed, also 3 of the 14 primarily unconscious patients (including the one just reported on) might have survived if their cranial injury was not setting other limits – which one cannot know afterwards.

(18) A 17-year-old girl drove as passenger on a motorbike which collided frontally with a car, more than 20 km away from Lörrach. She was thrown off the road and some 3 meters down an adjacent meadow while her companion was lying on the road and screaming from pain due to a fractured leg. As I arrived, the girl had lost consciousness and was in a deep circulatory shock, so I ordered the helicopter for transport, carried out the usual therapy which includes a tube to the airways, which I am used to lead through the nose. Now an old general practitioner passed by and offered his help. I asked him to establish an infusion on the other patient up there so that he finally could get something against pain, but the practitioner claimed that he did not need any. The same answer was given as I repeated and specified my demand. Then I realized that the man was not able to establish any infusion, which he expressed in this way. Since the helicopter had not yet arrived, I then asked him to ventilate the other patient, planning then to do the other thing myself. He had probably learned that somewhere, because as he arrived, he removed the disturbing tube a bit (fortunately without dragging it out) and started to make an artificial ventilation by the mouth-to-mouth method. I dragged him away and told him that this was not necessary any more, with a tube already in the airways; however, I did not dare to leave the patient in the hands of this clown, so I ordered the young

man brought to the nearest hospital (from which he later was transferred to our) without any sort of therapy. Then the helicopter arrived and we flew the girl to Basel where she died about one hour later during an emergency operation. At that time, I had flown back to Lörrach while the police brought my turn-out car back.

(**19**) A similar outcome awaited a bus driver who had not braked his vehicle and was, standing backwards to the bus and thinking of something else, hit by this. It was, of course, not driving very fast, but the man was pressed against some bushes which finally stopped it. I was required by the paramedics who found the patient in shock and with strong pain. While preparing the following intubation and requiring the helicopter, he could tell the telephone number to his wife and also mention that he had a small son. The branches had torn an open wound in the belly from where it was bleeding. After anaesthesia induction and intubation, I transferred responsibility to the doctor who had now arrived with the helicopter. Then I was called to another serious accident nearby, this time to intubate a comatose patient and in so far interesting that I had to wait for the helicopter from Villingen-Schwenningen, 85 km away and this patient, since Basle was now occupied by the patient of my last mission, was admitted to the other trauma centre in Freiburg. Later that day, I learned that the bus driver had died due to uncontrollable bleeding less than an hour after admission, in spite of immediate operation.

This should be enough of the tragic, I hoped. There must be a method of exerting a pressure on bleeding veins or organs in the stomach of people, when for several hundred years (before the introduction of controlled studies!) this could be achieved peripherally, simply by exerting a digital pressure. It turned out to have been invented already but, unfortunately, it was marketed under the wrong name of ‚Anti-Shock Trousers,' causing physicians to believe that it is a universal method to be used against all types of shock. Moreover, it is often used wrong (preferably without preceding intubation) and on patients where it acts negatively, in particular those with bleeding processes in the chest. Such is apt to occur in countries where gunshot and stab wounds prevail above blunt trauma. No wonder then, that under these conditions the so-called "controlled studies" will yield a negative conclusion, a problem met elsewhere in attempts to improve the therapeutic aspects of prehospital care. Although I was able to publish a few studies against the tendency, to ignore logical conclusions if a controlled study reaches the opposite conclusion, I must accept to have lost this battle. Concerning the logic of this particular problem, we were able to publish two cases (a third was encountered afterwards), who were about to die in short from bleeding aortic aneurysm but then could be stabilized by the so-called antishock trousers (in a new, non-pneumatic fashion) with preceding intubation, then operated in Basel, in all cases with survival and discharge home to follow. Layman may think that if a modest pressure can stabilize bleeding from aorta, it may also stop bleeding from veins and organs with a much lower vascular pressure. Most physicians prefer not to believe it, for the reasons given above. Real science may be tolerant but belief is always dogmatic.

Novel techniques vs. old standard

I experienced similar frustrations with my interest in a new, improved resuscitation system, which was developed on the background of a case-report from San Francisco. American doctors are, perhaps, not the ones who invent a novelty themselves, since such would automatically be in conflict to existing guidelines. To their excuse, the system was invented by laymen without any medical interest, until very suddenly:

A man suffered cardiac arrest at the toilet. The wife had learned something about resuscitation, but being unable herself to transport the husband away from the toilet, she grasped the { plumber's suction device present there, donating heart massage without caring for the ventilation. It lasted at least 10 minutes before paramedics arrived and continued resuscitation in a more conventional, professional way, with subsequent success, as the story continues. I can imagine that they laughed heartily of what they had seen.

Half a year later, the patient suffered another cardiac arrest, now alone with his son. The latter had learned the conventional way of resuscitation, but apart from exhausting himself, no effect

to his father could be seen of it. He then remembered that the mother had utilized the suction device with a good result. He ran to the toilet and back again, resuming resuscitation accordingly. Again, it lasted at least 10 minutes after alarm before the rescue service arrived, and again a complete resuscitation followed. It would probably again have been forgotten, had the son not suggested the same evening that such suction devices should be available at each bed on the intensive care unit. Imagine what the doctors answered; it could have been something in direction of "listen, my good man, at first you should learn how to resuscitate correctly before you attempt to invent something new," at least this is the attitude of contemporary physicians. Being unable to talk the man off the double success, one of the doctors pondered further about the case. Suddenly he realized that this way of resuscitation solved a problem created by the traditional method, in relieving the increased pressure in the chest. This method, called, alternative compression-decompression (ACD), produces (when correctly used, se my German instructions for use of ACD) four effects: 1) resuscitation is improved in that more blood is suctioned to the heart before it is pressed out again; 2) both the relieve of venous blood flow back to the heart (through the decreased intrathoracic pressure) and the improved arterial circulation leads to improved brain and kidney functions; 3) also the heart in itself profits from this mechanism and becomes easier to bring back into normal rhythm; and finally, 4) ACD creates a certain ventilation, among other with the consequence that "Patient One" survived without separate ventilation in the first 10 minutes.

I was shown this novelty on a congress in Budapest in the Summer of 1992 and got hold of the first device of its kind in Germany. In the following year, we could present our preliminary beneficial results on 3 international congresses, with reference to experimental studies confirming the above mentioned effects. But now problems arose: it was demanded that ACD should only be used according to existing guidelines from the American Heart Association (*wrong use*) and its possible superiority then confirmed in survival-studies involving a control group, indirectly employing an insufficient power of the studies and an in-hospital time much longer than the prehospital phase actually considered (*wrong study*). Before I got hold of my own device, I had realized that it should be used with a much lower frequency (40-60/min) than conventionally (80-100/min), and, moreover, ventilation should be given simultaneously with the compression in order not to compromise the second phase ("suction" of blood to the heart). No wonder, the majority of the erroneously conducted studies led to the conclusion that ACD does not improve resuscitation and in 1998, its further use was prohibited by the FDA in USA.

(**20**) An example of the limiting area of resuscitation, in which I believe that ACD made the difference, is given in the description of a mission I had to a small village in "Markgräflerland", the land between the Rhine and southern Black Forest. A woman had collapsed during a stroll and did not move any more. It lasted 11 minutes after the alarm had been received at the Central before the nearest ambulance arrived. During this time, the woman had neither moved, nor had she been touched. I needed another 2 minutes, and not because I was driving particularly slowly. It looked absolutely obsolete to perform a "ritual desuscitation" (abbreviated: resuscitation) under these conditions, but we practised the new device and thought that all paramedics should have their chance. And then we managed rather fastly to achieve a stable heart rhythm. I was not the least proud of this result and would rather have excused it at the moment. But having now intubated the patient, the problem was to find a hospital with free capacity for ventilation. The fifth request from the Central was positive, but then far away. I rejected the suggestion to utilize the helicopter, this mission had been expensive enough already and the long-lasting lack of oxygen to the brain made it highly improbable that it could be considered a success. Later on, I was forced to revise this attitude: the patient got rid of tube and ventilator the following day. Her brain had indeed been damaged, a month later they considered to transfer her to a nursery, but another two months later she was discharged home in a functionally sufficient condition. Although such a course is rare under conventional CPR, it is not quite unique. The critical time of anoxia (lack of oxygenation) to the brain, after which cerebral resuscitation seems impossible, is obviously much longer than the 4-5 minutes as was previously assumed. Remains the question why some survive the long anoxia whereas others do not wake up again when resuscitation was commenced fastly (and primarily successfully) after cardiac arrest.

We did not need any studies in order to see the value of ACD. It suddenly became interesting to measure the oxygen saturation during resuscitation, a parameter which appeared beyond comprehension during conventional CPR but even in some obsolete cases, a saturation curve (then with lousy values) was obtained. It looked as if this value also had an important

prognostic importance, that is, only a good oxygenation after a few minutes of ACD-CPR would result in success, but further studies were abandoned. Anyhow, it proved impossible to publish our results. Instead, I entered a discussion about prehospital science, contradicting doctor's ambitions when associated with publishing studies.

In the 1980ies, prehospital fibrinolysis was a problematical topic, and I was forced not to admit patients to one of our hospitals which had denied to continue the treatment I had initiated, although I had restricted it to complicated cases of suspected myocardial ischaemia accomplished by cardiac arrest or shock. This restriction was again made necessary by the limited amount of fibrinolytics which I had begged from the industry. Not wanting to restrict the indication to definite signs of a myocardial infarction, it soon became clear that it was possible not only to minimize such but in selected cases even to avoid one:
(**21**) A 48-year-old man with coronary vascular disease for many years experienced a severe and persistent attack of angina pectoris. Finding frequent ventricular extrasystoles and a blood pressure of 80/- upon their arrival, the paramedics called for a physician. In spite of severe pain and beginning shock, the patient was able to inform me that this attack was more severe and completely different from any previous heart attack he had known, also in being unresponsive to nitroglycerine. We were only in the possession of a single-channel ECG-device for arrhythmia diagnostic and defibrillation, so I could not evaluate any standardized ECG-contour. Following vainful use of analgesia and an antiarrhythmic drug, fibrinolysis was begun. Already during the (rather long) transport, through which we passed the mentioned hospital and headed for another one, the patient recovered completely and did not make the impression of having suffered a life-threatening event recently. Still, fibrinolysis was now continued, and good so since a new deterioration the following day made a helicopter transfer necessary to another clinic for acute coronary vascular intervention, from which he again completely recovered.
In the second clinic, it was criticized that fibrinolytics were started without being in possession of definite signs of a myocardial infarction. Today, it is an applauded effect when it proves possible to prevent one (this succeeded another two times, including a case complicated by ventricular fibrillation). Moreover, due to the „gaze-delay" in the clinic for the decision to start a fibrinolysis, prehospital therapy is started on the average more than an hour earlier, so there is more time to gain (and thereby more tissue to save) than one would expect merely from the transport time to the hospital. New studies suggest, that most patients are better off with coronary vascular intervention if such can be offered immediately upon admission.

Frustrations with fire

Burns have always given me the frustration that I know what helps (an area where Danish physicians have previously made a big effort) but it is not correctly used. Perhaps because it is just cheap and non-patency-protected tap water, long enough. Everybody who have burned a finger - and therefore nearly everyone of us - knows how relieving it is to keep it in a cold glass of water, and the pain produced when it is removed convinces you to keep it there for about an hour. By somewhat more extensive burns, you would therefore also start with a similar cooling but after a few minutes, you leave for the hospital and soon regrets that you had left the water source. However, at the most serious burns, a doctor may come who does not believe in such simple means or, as common in Germany, fears hypothermia associated with the cooling action (which may indeed be a problem in children). There are no modern studies for the topic and there is no firm to support the case and earn money upon their product. The physician may believe that only the first 15 minutes matters for cooling, so when he finally arrives (or the patient is in the hospital), it is assumed to be too late.

Without wanting to tire the reader with medical details I want to mention that local cooling not only relieves the pain and put out remaining fire in the clothes, it also reduces the extension of the effect in the depth and the degree of burns at all. Moreover, the tissue reaction is affected, both what extravasation of water and production of systemic humoral mediators are concerned. This does, however, have a long-lasting cooling for about one hour as its precondition. There are indications in experimental burns (older studies) that consequent cooling leads to an improved survival of severe burns, even when a considerable hypothermia simultaneously takes place. For that reason, I have preferred to use this hour on-site when I

met an isolated, serious burns case, rather than hurrying to the hospital as expected by on-lookers. It is therefore reasonable to regard an example where at least the analgesic effect of water could convince:

(**22**) On a very hot and sunny summer day, a 40-year-old woman told that she would pour gasoline over her and ignite it. Nobody believed, so she did it. An unusually clear alarm followed, resulting in my alert simultaneously with the ambulance. Since I should drive some 15 km, I utilized the radio to demand permanent rinsing of the burned areas as soon as possible and at least until I arrived. Fortunately, a garden tube had already been used to turn out the fire, so it was only necessary to continue what had already been initiated. Upon my arrival, I was surprised to see the patient almost completely (100%) burned but complete conscious, turning herself around to get water to all parts of the body and then not having any serious pain. It was therefore no big task to persuade her to continue, while the Central was looking for a burns unit to admit her and I installed an infusion. With a certain delay (to avoid their arrival too soon), we called the helicopter. While it was clear that the extensive burns in the long run would make an anaesthesia necessary and in order to facilitate analgesia during the transport, I performed a nasotracheal intubation.

Fig 3: The anaesthetized patient is brought to the helicopter (22).

Now you can imagine which effect it has, on a warm sunny sunday, with everybody outside without any pressing tasks, when suddenly an ambulance, the fireworks, police, the emergency physician and somewhat later the helicopter comes with an acoustic announcement that here is something to look at (perhaps I should have sold my books upon that occasion). When the helicopter landed, the patient was anaesthetized and the garden tube replaced by humid towels. In a way a perfect mission, had it only been rewarded by a positive outcome.

The next day, they called from Basle and asked me to get the patient back to our own intensive care unit. With these most extensive 3rd degree burns, they did not see any chances for her recovery. Of course, we arranged the transfer immediately; Basle is in another country and when they had finished their extensive trauma care, it was also in our interest to relieve their intensive care unit as fast as possible, aside from formal reasons to bring dying patients back to their native country. The patient was still intubated and was receiving a continued anaesthesia with ketamin, at least she was prevented from feeling pain in this way. She died a few hours after the transfer.

Rescue tecniques

"How do you absorb all these impressions, provided by many different emergencies?" many friends wanted to know. Generally spoken, this was rarely a problem. Of course, their were

some missions which we difficult to forget (a considerable amount of which are collected here) and even a few which should better be forgotten (reference avoided on purpose), but in most cases, it was a kind of pleasure being in a position to help under conditions where others were not. And "help" was not just a matter of rescuing lives and reducing morbidity, it was connected to the treatment of pain and suffocation. Of course, their were some missions which we difficult to forget (a considerable amount of which are collected here) and even a few which should better be forgotten (reference avoided on purpose) but in most cases, it was a kind of pleasure being in a position to help under conditions where others were not. And "help" was not just a matter of rescuing lives and reducing morbidity, it was connected to the treatment of pain and suffocation. Whether or not this treatment was life-saving, that was almost of secondary value.

I have mentioned previously that intubation (introduction of a tube to the airways) have a central importance during the most serious missions – those which justifies the presence of a physician; – that I have developed a particular technique for it; and that I prefer the route through the nose, even in cases where this appears contraindicated. Most physicians prefer to bring the tube in through the mouth, which is badly tolerated (swallowing reflex) and therefore calls for ample supply of sedatives. Moreover, the nasal route enables intubation with ventilation postponed, as mentioned in some of these cases. I have utilized these principles on a rather broad indication, e.g. to confined patients in larger accidents. Moreover, it is easier to work resolutely on a patient who does not scream in pain while anaesthetized, in turn with a positive effect on the time spent on the scene and the quality in the field stabilization offered, as far as this can be of any help. We have exercised a liberation technique with the local fireworks, enabling a rather fast liberation of confined patients. The sad record in my on-scene times, 59 min, occurred in a nightly mission on a main street, 15 km away. This was one of the accidents after which I could not sleep, although I could have had at least an hour at the pillow that Sunday morning:

(**23**) Late one night, a couple of young men were on their way home from a visit to a discothek as their car suddenly gained affinity to one of the birch trees which delineated the straight road. Here, it remained in an incredible position, on the right side but with the roof up against the tree. It did not look as compatible with continued life for the insiders but to my great surprise, both were responsive, suffered great pain and in great fear of what might come. We shared their fear since it was not clear, how we should get them out of this wrack alive. At first, we supported the upper torso of the driver with a strap, relieving the passenger of his weight. Now I asked the paramedics to require the helicopter since we, in case both patients were liberated alive, had better distribute them to two different hospitals; with a longer starting time at night, it was better to require the helicopter right away. Then I tried to enter through the window in the back but received an electric jolt. Having reminded the fire workers to disconnect the car battery, I resumed the intrusion. I have often entered car wrecks but this was one of the most adventurous of such excursions. The intravenous accesses which I established on both patients had the purpose of giving way for pain-killers (analgesia) and drowsy making drugs (sedation), whereas the intravenous volume substitution is rarely important. So, if all other measures would be in vain, the two accident victims had already received some help.

Fortunately, it came to more than that. As the car was about to be drawn down, I noticed from the inside that both men had a hand in the dangerous area. The procedure was interrupted and the hands liberated. In the meantime, the helicopter had landed and I went out to inform the colleague from Basel. We agreed that, once occasion would come, he should take care of the patient at the right who was presumably more injured. But as the car finally came down from the tree, the two men were still confined in it, until the roof was cut off. Simultaneously, we had access to the two men and this is the reason for me to claim this solemn case to be a comparison between my methods and the generally exerted ones. The driver now received etomidate, was intubated through the nose but, at first, not ventilated, i.e. he breathed spontaneously and we had hands free for the liberation. We have noticed that it is not only good for the spine but in general more easy to get confined patients out of a car-wreck when they are removed vertically along a scoop-stretcher, so this was what happended next. On this, the patient was transported to the vacuum-mattress (already prepared on the real stretcher) where the scoop-stretcher was then removed. Only when arriving in the ambulance, a ventilator was attached and the paramedics requested to attach the usual monitoring (for blood pressure, ECG and saturation). In the meantime, I went back to the other patient. Seing that the reverse order had been practised there. My help was not needed, so we slowly started

the transport, driving towards Lörrach with our patient. Only 29 minutes later did the helicopter take off (in this case, time was not of importance). Both of the young men could be weaned from the ventilator after about one days therapy and recovered fast from their dangerous drive.

Fig 4: In this car wreck, which is standing on its side with the roof against (partly around) a birch tree, two young men are lying awake, confined, with serious pain and anxiety for their life (23).

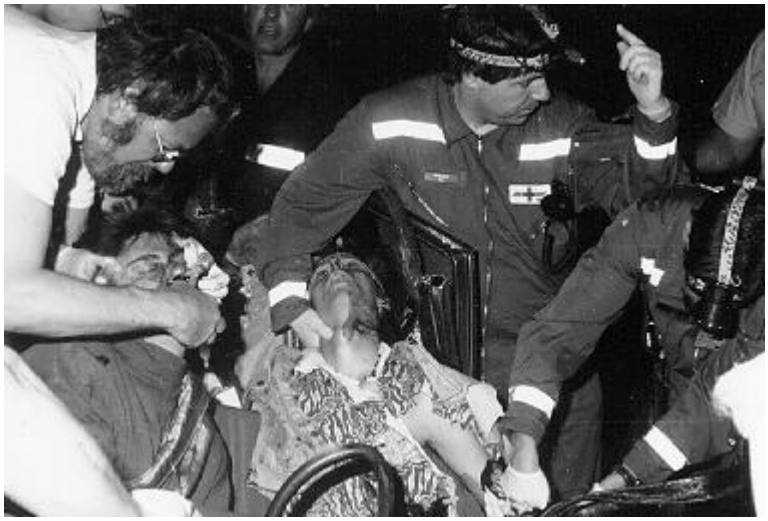


Fig. 5: Anaesthesia is induced only after the car is taken down from the tree and the roof removed (if urgent, I had attempted it in the wreck before) (23).

Fig 6: Rescue of the two victims, now anaesthetized (23).

(**24**) In order to understand a bit more of this rescue technique, I shall utilize some photos I have from one of the rare missions to one of our two motorways.

Fig. 7 Removal of the roof from a car (24). Fig. 8. Vertical rescue over scoop-stretcher (24).

A car had left the road and was stopped by a tree after having rolled around. On the hind seat, a woman was seated, now with spinal injury and associated paresis – fortunately, she was left in the car until we arrived. While we attached a neck collar (always to be used by this injury, 220% have a second fracture at some distance from the one leading to the symptoms!), the firework demounted the roof (Fig. 7) as usual. Having finished creating the cabriolet, the patient was drawn up along the scoop-stretcher (Fig. 8) which slowly declined in response to her weight. She was placed on the vacuum-mattress, which had been prepared just adjacent to the car. In the meantime, the helicopter had landed, with which she was flown to Basel. The chances of recovery are better with airtransport, even for smaller distances. We have used this method often before and after, but never with such impressive pictures. Previously, we had tried a so-called "extraction device", but its use is not so uncomplicated and it is incomparible with the vacuum-mattress.

In the continental Europa, stabilization in spinal injury should generally follow this model. In North America and Great Britain, however, another invention is preferred, "the spine-board," which is a completely straight plate (thus even worse than an operating table), to which the victim is attached with straps. It hurts very much to lie there, even without a fractured spine, but nothing doing: this is what the guidelines demand. Leading a symposium in Baltimore in May 1997, I tried in vain to make aware of the alternative which supports the spine when formed before the air is evacuated. Prehospital emergency medicine was a stimulating area in earlier earlier days when even the emergency departments of the hospitals had lost the lead. Strange that it has now come to a stagnation, not in spite of but as a consequence of the many persons who are involved in improving it further. Their efforts can only be compared to that of a missionaire: spread the dogma as far as possible without altering anything of its basis.

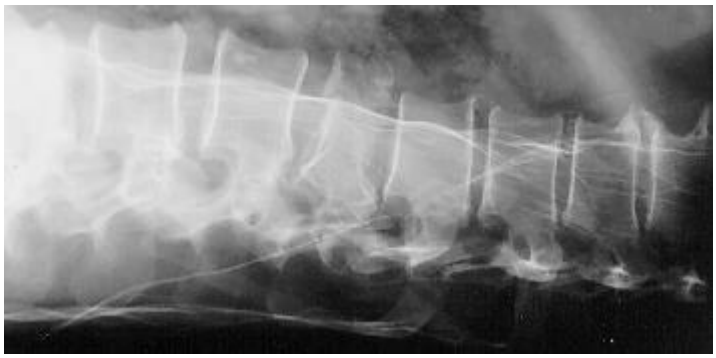


Fig 9 An X-ray of the spine with artefacts from a bad vacuum mattress.

The criticism can be continue towards radiologists, who are disturbed by certain shadows from the bag containing the polystyrol balls i the vacuum mattress - but I should admit that this is not equally bad for all of them. My remark that "radiologists prefer good pictures to good patients" was not well heard. Nevertheless, it remains a problem to avoid unnecessary manipulation before at least a surveying picture of the spine exists. I can imagine that future diagnostic principles (spiral-CT of seriously wounded in some 5 minutes, to be evaluated only when the patient has returned to the Emergency Department) can change the principle and also make a combination of the vacuum mattress with a non-pneumatic "antishock-principle" preferable. There is, of course, a risk associated with a expectable frequent abuse of this method: "Tell me what came out of the spiral-CT, so that I can decide if it is necessary also to get out of bed ..."

(**25**) Once I really regretted to have entered a car wreck. A French car had been hit from the left (both doors demolished) and was now thrown into a pit (right doors up against the walls of the pit). The driver and two children, though injured, had emerged through the side windows, whereas the front seat passenger was to corpulent to permit that, in addition to suffering an asthmatic attack. I swung myself into the open window – and regretted it immediately. There was a heavy smell of gasoline and it had been a small comfort for the patient if I had been loyally burned together with her. Fortunately, the fire workers came soon after and covered everything with foam before they violently opened the left front door. At this time, the patient’s asthma was under control with intravenous drugs and her liberation hence uneventful

(**26**) She was probably rather adipose as she entered the apartment, but somehow it was unnecessary for her to leave it through more than 10 years. Then she hurt her foot and a doctor came and prescribed an X-ray examination. A small ambulance came to get her but

only now it was realized that the lady was too thick to leave the apartment trough the door. There was, however, a broad kitchen window and the fire workers, always hoping for an unusual mission, gladly arrived with their special ladder with a mounted stretcher. Only now, I was also required to supervise the evacuation. I decided that the stretcher was heavy enough without my contribution and just provided a tranquillizer, not just for the coming flight but rather since the street was now filled up by curious on-lookers. I found the firemen a bit too satisfied with their mission and said: "Just stay where you are, we are just taking the patient to an x-ray examination and bring her back in a quarter of an hour". She never returned to that apartment.

(**27**) I clearly remember the accident by which I was *most exhausted*. I flew with the helicopter to a strange accident in the steep slopes of the Black Forest, so steep indeed that a tractor, in coming off the road, landed in the roof of a farm situated below. The farmer did not see anything funny in that, he was trapped between the tractor and pillars of the roof, and if he was liberated fastly, he would either fall backwards with the tractor or down into the house, with additional injuries resulting. He had enough already to justify an intubation immediately, but it was not absolutely necessary, he was still responsive and an intubation there on the roof would be associated with considerable risks for myself. I restricted myself to an infusion and an analgesic. Having done so, the man got weaker and needed my continued support. The firemen chose to attach a rope to the tractor, thus preventing it from falling, while a part of the roof was cautiously demounted. It took about half an hour to liberate him, and during this time I had to stay where I was, supporting him and avoid falling myself. When we had finally returned to firm soil, my whole body was shaking but in particular the hands from fatigue. I utilized the presence of a rescue ambulance in the further treatment, it was good to be able to close the door and her was ample space, quite contrary to the helicopter. Foremost, there were no witnesses to observe my shaking hands while the patient was now intubated. We flew him to Basel and he survived the accident without any problems – never mind the rest. What I learned on that occasion was not to spend my forces on such an action when I thereby possibly disqualified myself from being able to help when my time – exclusively mine – then finally arrived.

(**28**) Then there was the mission where I got *most wet*. Twenty km from Lörrach, a worker had fallen down into a water reservoir which was *almost* empty. This accident gave him a serious fracture of the spine with associated paralysis.

Fig 10: Improvised rescue in the watertank (28).

The problem was to get him out of this reservoir, the only access being a small opening in the ceiling, without destabilizing the fracture further by compression from the tilted stretcher. It is a wise rule to keep such considerations for one self, you can think of it while the basic therapy (analgesia through an i.v. line and stabilization with neck collar, scoop stretcher and vacuum mattress) is carried out and afterwards demand some particular things as if every aspect of this mission was a matter of routine [Fig. 10]. Since I had arrived with the helicopter, I had already asked for their vacuum mattress, which is narrower; now I demanded the shoulder-strap which is used to draw persons of in rescue missions. We had to utilize the scoop-stretcher below the vacuum mattress, the normal stretcher being too broad for the opening. Two lines were tied to this while a third one was connected to the shoulder-strap. The eventual success of this action depended on that the policemen above the tank would make a stronger draught to the latter [Fig. 11]. In this case, precise instructions, without any haste for that, paid off. In spite of all improvisations, everything went well. The patient was flown to Basel where an operative stabilisation of fractured lumbar spines was carried out, eventually resulting in his ability to walk again.

Fig. 11: In this phase, it was particularly important that the patient was lifted up under the shoulders (28).

A Dirty Job

(**29**) It is not a fancy occupation being an emergency physician. One time I arrived to what proved to be a superfluous mission to a child after having attended the opposite, with Danish 3colors on my clothing (blood and white). The parents of the febrile child looked at me with disgust and open criticism, indicating that my clothes would leave some wishes open. I could, of course, have explained that there had not been any time to change clothes after the previous mission and I could have added that their alarm, resulting in an emergency physician, had been somewhat exaggerated. Instead, I told that I could also come in fine evening clothes, but that would cost extra.

(**30**) At another mission to a burning house, there also proved to be no need for an emergency physician but once being there, I decided to observe the extinguishing work near from, as it was not permitted the many spectators. It was indeed interesting to see the firemen in special dresses approach into the house without being able to see anything. As it was no longer so interesting, I decided to drive home. Coming into the turnout car, my nose betrayed an intense smell of smoke. I went directly to get a shower and changed all my clothes, so that other people might stand me, at least what the smelling was concerned. The car still smelled of smoke in the coming days. From that night on, I was difficult to get me very near to burning houses.

(**31**) Still, another mission carries the label of being the *most dirty* one. It had rained for several weeks and we talked about a European version of the Monsum and it was about time

to get this ark put together in the back garden. In spite of this weather and associated working conditions, a gas pipeline was being constructed, now going upwards a steep hill. Suddenly, one of the big machines used for this particular purpose slipped in the mud and rotated down the hill. The first alarm told that five workers had been buried under it, so the Central sent all it had with wheels on. Counting more accurately, only one worker had been hit as the machine came tumbling down. Generally, survival would be impossible when you were hit by such an instrument but it was probably the slippery ground, which had caused the accident, that also, in turn, saved the man in pressing him down into the mud. I arrived in what seemed to be new ballet shoes and was helped ascending by a fireman with more suitable boots. Arriving at the spot, the man was lying hidden; he was responsive but suffering heavy pain from various fractures. A brief examination did not reveal anything serious, but the injury was of a type which made, among others, spinal fractures possible - I had passed the machine on my way upwards, - and demanded utter caution with the further rescue. Five meters to the wrong side (according to the one we should eventually descend), there was firm soil in the form of a wood, and there the vacuum-mattress was prepared. In the meantime, an intravenous line was established and an analgesic applied through it. With the help of a scoop stretcher, the patient was cautiously lifted, still with his head downwards, and carried over to the wood [Fig. 12]. In the meantime, the helicopter was alerted, fire workers were building an interimistic bridge over the pit around the gas line, and I had asked the workers (all wearing heavy boots) to form a double chain, to help our descend later on. As we reached firm soil, I injected etomidate; 15 seconds later, the anaesthetized patient was turned around onto the vacuummattress and, another few seconds later, had a tube down through the nose to the airways. The helicopter crew arrived and took further charge of the patient. The bridge worked perfectly and also the rescue chain was functioning [Fig. 13], except that it proved impossible to prevent the whole rescue team from utilizing this aided descend (it should only have been the patient and the doctor performing ventilation thus transported). The patient was flown to Basel from where he was discharged after several weeks.

Fig 12: Interimistic bridge (31).

Fig 13: Rescue-chain (31).

Dyspnoea

(**32**) Pain can be terrible but the feeling of suffocation is probably worse. Whenever possible, appropriate drugs are attempted but then there are cases simply calling for immediate intubation. Such a case was that of an 18-year-old man who experienced a sudden and serious asthmatic attack. It was just a km away but when I arrived, the patient had a dark blue skin colour and was hardly conscious any more. I was lucky to find a vein immediately but then decided to use it for etomidate instead of an anti-asthmatic drug. Now the patient did not experience his condition, without having it otherwise improved. Again, it may be called luck that blind nasotracheal intubation succeeded instantly. With the application of a certain type of

ventilation and, of course, now also the intravenous drugs, the young man's life could be saved. I cannot help pondering of the outcome if I at first had tried to avoid intubation. Asthma appears to occur more often and also with a more frequent fatal outcome than was previously the case. I have also witnessed some such cases; undoubtedly, the worst was that of a 30-year-old woman living in a flat together with her two fatherless children. The alarm was that of cardiac arrest. Although intubation also succeeded instantly here, it proved practically impossible to get the air into, and in particular out of the lungs. For this purpose, it should be possible to let the patient „inhale" suitable drugs, not just the uneven distribution following injection of epinephrine through the tube which we, of course, also tried. The development of such a system is one of the challenges which a rescue service can raise on the industry. It will not help the young mother who died on site after energetically resuscitation attempts, but perhaps it can help other asthmatics.

(**33**) I was called to a case of epilepsy, far away near the highest mountains of the Black Forest. At first, I wondered why the helicopter was used for such an emergency since convulsions have mostly ceased long before the physician arrives. In this case they had not, they had indeed continued for at least 50 min, the longest I have ever experienced. Besides, this was really far away from every village and the air transport proved to be most reasonable, also because of an acute vital threat to the patient who had dark blue colours from lack of oxygen in addition to the general exhaustion and biochemical changes following prolonged muscular activity. Also spectacular was that this was the first case in which I utilized the intramuscular route of *midazolam*, then a new benzodiazepine (the first one being water-soluble for rapid absorption), since the patients movements were too rigid to get a venous access. Just a few minutes after midazolam, the convulsions almost ceased and the patients ventilation improved instantly. Having secured an i.v. line and a small additional dose of midazolam to stop the remaining muscular movements, the patient was found to remain deeply comatose, and I decided to perform an intubation before the air transport to Lörrach. When this was removed four hours later, a right sided paresis remained for another day, indicating how serious the condition had been. He was discharged a few days later but kindly requested not to stay in such desolated places, in case another attack of epilepsy would occur.

(**34**) I was called to an old people's asylum where an elderly lady had complained of breathlessness and, as the paramedics arrived, now had lost consciousness. A distinct respiratory stridor was heard but it was difficult for me to decide if that was her normal condition, having never seen her before (a general handicap in rescue services). Similarly, the nurse on-call had her first service that day and could not contribute further. It was never my intention to postpone a fatal outcome in the high age if, e.g. cardiac arrest had already taken place, but here was neither a clear-cut condition, nor suitable diagnostic hints available, so I decided „in doubt for the accused" at least to perform an intubation, „in order to facilitate transport," as I excused myself. This actually solved the problem, the old patient tolerated the nasotracheal tube without the usual subsequent ventilation and was admitted to our hospital while I was leaving for another mission. The next day, I was called to the medical intensive care unit where they had just removed the tube, thereby being convinced of its persistent necessity. If I would kindly repeat the intubation, now that I become acquainted with the route. A subsequent chest X-ray showed the cause: a huge but almost entirely intrathoracic struma which was compressing the airways but proved to be relatively simple to operate upon. Afterwards, I had a talk with her; it was very impressive to hear her report of repetitive suffocation attacks, but nobody seemed willing to investigate her problems further. A serious warning which, although it has not altered my attitude to resuscitation in high age, illustrates the necessity to help before cardiac arrest is actually present.

The frequent resuscitation calls to old-people's asylums has indeed turned into a problem of its own. Fortunately, I have always responded to the calls there promptly, including the case where it was a nurse assistant who had become a heart attack. The site in itself is no guarantee of, who is actually needing help.

Problems are arising

(**35**) I have indicated that the colleagues in other rescue services were more thorough than

me, but for that reason also rather slow. This created some tensions, which culminated as I one day arrived to a man who had dropped down from a roof. He was intubated and the Central requested to inform our hospital about what they could expect. That proved to be a rather long list, so I was asked if I, under these conditions, would not prefer the helicopter. My answer, ”No, the patient's condition demands immediate transfer,” was heard over radio on the helicopter base, and their reaction was negative in accordance. In the end, I went to Basel with a provoking lecture about „diagnosis versus therapy with respect to time consumption“. The rescue service calls for compromise, a superficial presence is of no value when field stabilization is attempted, but too thorough an action causes a delay in our on-scene time, which causes a few of our patients (under the given premises, with frequent use of arms even much more) to develop an increasing blood loss, resulting in decreased chances of survival. On this background, it is preferable to listen to the colleagues in the university hospitals who knows everything better. The arguments were accepted, Basel started to monitor the on-scene time and effectivize rescue, which is a necessity for our continued excellent cooperation over the borders.
Also without a call, my presence could be demanded. We were not only responsible for the anaesthesia service in two hospitals but also the rescue service with the car and (initially also) the helicopter, so sometimes, there would be somebody missing - somewhere.

(**36**) Chased by the police, a car collided with high speed in another after midnight. In consequence, 6 patients were wounded, four of them seriously. The emergency physician on duty required support from the helicopter with a Swiss doctor plus a colleague – and that turned out to be me. The police brought me to the „battlefield“ in Weil-am-Rhein – and also the police utilizes the short way through Switzerland when they are in a hurry. When I arrived, the helicopter was about to start transporting the most seriously injured patient to adjacent Basel. It was not a long flight, but utilizing the helicopter on this occasion provided for an extra vehicle with an emergency physician. My fellow consultant joined one of the three patients who were admitted to the two hospitals in Lörrach while I took care of another two patients, scheduled for Mulhouse in France, one of them was fortunately able to sit. The hospital in Mulhouse is difficult to find when you are not coming there frequently, so I requested help from the French police, who met us on the border and escorted us the 25 km as demanded. Although it had ruined my night’s sleep, I was satisfied with this mission, on which occasion we had distributed 6 patients to 4 different hospitals in 3 countries. But then I wanted to drive the big rescue-ambulance back home, just for fun. The local rescue organization did not share the fun and a conflict seemed to result, doctors were not supposed to drive ambulances. This dispute had, however, a completely different background: I had criticized that the emergency physician was often activated too late in spite of a rather clear-cut alarm, and occasionally with fatal consequences for the patient. Now, the rescue service is organized differently: the doctor is sent out to everything, anytime, and still without any attempt to create an effective organization through a more keen analysis of the alarms.

(**37**) Being called to a train that had been stopped, it was not the medical part of the mission which was interesting, it was *finding the train* which was very peculiar as it had been stopped far away from everything. The comatose patient was a drug addict who was woken up the usual way as previously described. Then I asked myself why I should pick him up at a distant field, rather than gather him on the next station. The explanation is rather simple - too simple, one might say: *emergency in train = emergency brake*. Then you might ask, when a red painted emergency brake had done anything good in a modern train the last time, an *emergency communication* to the driver would probably be more useful.

The largest accidents

(**38**) Father knew that he should not drive when he had drunk too much, but he was most unsatisfied with his wife's way of driving. After a loud discussion, he decided to stop the car by removing the key. It did indeed stop, but quite unexpected and without activating any braking light. As a result, quite a number of cars collided at the main road. I was brought by the police and never saw the colleague on call there, he was taking care of two children in a rescue ambulance. When you arrive too early at a big accident, it is practically impossible to survey who are involved in it, so I started in the rank of order as I met them and they seemed

seriously injured (later the problem is that there are too many helpers in order to make a survey of them, while the patients may disappear in the crowd). The first I met had a complex fracture of the thigh and strong pain, so she got an analgesic and was left again, since there was no vital danger. The firemen told that there were at least 10 injured (eventually there were 17), so I asked the police to transfer this information to our dispatch Central, leaving it to them to get further enforcement. They sent a number of ambulances, two helicopters and further two physicians. Then I tried to establish a place for triage of the injured, in order to survey their therapy and select the urgency and mode of transport to different hospitals. In practice, it did not work well, since many of the victims were still confined in the car wrecks while others were already brought into different ambulances. It therefore became necessary to forbid any ambulance to drive away without a doctor ordering it, the reason of this precaution to be described later.

Having given these orders, I came to the next patient, entrapped and with multiple fractures but about to be liberated. A "pirate anaesthesia" as previously described speeded up liberation. This was repeated at the next car wrack. Then followed two vitally threatened patients in need of intubation and fast transport, but then the worst was taken care of and I was about to see what it was all about. I saw some other patients, unfortunately still remaining in the ambulances. Then I returned to what should have been the collecting place where only three patients were found, two , apparently less injured and the before-mentioned woman with the complex fracture but still persistent serious pain - no wonder by this fracture. Under other circumstances, I would have started an intubation anaesthesia, to be carried on for the operation, but these surroundings did not invite for maximal therapy, so instead she received a pirate anaesthesia for transferral to the vacuum mattress and simultaneous provisionally setting of the fracture. The other two were given lowest priority for transport.

The helicopter from Basel landed and took care of one of the children which was brought to the Children's Hospital in Basel while the other was taken to the paediatric unit in Lörrach by my colleague, who had intubated both within the ambulance. One of the intubated patients were transferred to a colleague from Schopfheim, for the other one the helicopter was approaching and another colleague had almost arrived, as my personal radio receiver gave another alarm. I ran to the turn-out car (I had arrived with the police but all 5 consultants had a key for it) and was ordered to a new mission, just a few km away where a train had hit some people. Later, I realized that it was a mistake to leave this mass-accident and it had been more suitable to send the other emergency physician who had not yet arrived, but I cannot change that now. I utilized my car-key and went on the new mission, without the assistance of any ambulance.

An elderly woman had tried to prevent a friend from throwing herself in front of the train. She had not succeeded and was, in addition, herself hit by the train. Her friend had died, so I informed the dispatch central that there was only one patient, but she was seriously injured. She was in a profoundly shocked state and was confused but not unconscious and resisted all attempts to help her. Simply in order to proceed, I was forced to start a "wildcat anaesthesia" (an injection of ketamin into a muscle). Some minutes later, it was possible to establish an i.v. line, which was used for an intubation anaesthesia - my sixth open-air anaesthesia that evening. Shortly after, a rescue ambulance did turn up. We brought the patient to Lörrach for immediate operation but she died two hours later due to internal bleeding.

From the big accident, all 17 wounded patients survived, which may cause wonder when you see how many were vitally threatened. Nevertheless, I must confess, with a certain regret, that the most seriously injured was the one who left the place with the last ambulance, whom I had given lowest priority. He was transferred to the hospital in Rheinfelden where they found a traumatic, thoracic aortic aneurysm near the heart. He was then flown to Freiburg and operated there. My colleagues and I have experienced this phenomenon, the the most seriously wounded was to be found among the ones who were best off after the accident, on several occasions. Acknowledging that you cannot avoid it, this is the reason for recommending all apparently less injured patients examined another time when the others have gone, which means that you should take care to avoid any participants in mass-accidents and catastrophes disappearing from the accident site - they also need attention!

Although this was not the biggest accident I have dealt with as emergency physician, it does illustrate the need for other peculiar dispositions on such occasions. Generally, only few patients need speedy operation, but exactly for them, there must be an ambulance (or a helicopter) kept ready. Many more will need some help at the site, e.g. for liberation or setting of fractures, but may then be kept for a while on the site. For that purpose, manpower of the

paramedics who arrived with ambulances are necessary. Instinctly, however, many paramedics will transport the patients in their rank of appearance, hoping that it will then be easier to survey the remaining. Not objecting that there may be some who can only be saved by acute operation, it is necessary to let a doctor on the spot make this decision and therefore forbid unauthorized transport. Finally, the old tradition of "importing the catastrophe to the nearest hospital" should be discouraged. Again, it is preferable it a doctor decides what is the appropriate clinic for a given patient (they do not all need a trauma centre). In this case, 8 hospitals received patients and none of them were stressed beyond reasons. Of course, everything could have been done better, and doing better next time is the purpose of analysing all mass-accidents afterwards.

(**39**) A group of French soldiers camped on the right side of the Rhine and unexpectedly ignited a fire just over a bomb from the 2nd World War. Following the subsequent explosion, one of the young men were instantly killed and several others seriously injured. It was not far from the city of Müllheim, from where the first emergency physician arrived, who subsequently required enforcement, leading to my arrival with a helicopter. The Swiss helicopter, I had arrived with, flew one of the soldiers after minimal treatment to Basle while I was left to take care of two others. Nearby, a big French transport helicopter (Alouette Puma) had landed and I was informed that another German helicopter was on its way. Having brought my own emergency bag along, I had enough equipment to establish a venous line and intubate both soldiers, of whom one was unconscious with a cranial trauma while the other was in a state of shock and an opened stomach. Unfortunately, I was only in possession of one ventilation bag, but my technique permitted nasotracheal intubation without necessarily ventilating the patients. I required the Puma for flying both of these soldiers to Colmar and we got them on board along with some of the less injured. Normally, we would say that our rescue helicopters had everything except room in them, but in the Puma, it was completely reverse: lots of room and nothing else. Anyhow, I thought, Colmar was not far away, on the other side of the Rhine. It did indeed only last some 5 minutes to reach Colmar, but then another 10 minutes to find the hospital from the air. I was slowly finding it embarrassing only to be able to ventilate one of the patients. Shortly after having admitted the soldiers, who all survived their meeting with the bomb, the REGA helicopter picked me up again and informed me that there was no reason to go back again.

Only later was I informed about, what had happened to the crew from the helicopter of Bremgarten. They had received another soldier in a critical condition but in the meantime, French gendarmes had arrived. They asked where he was going to be admitted and they explained that his condition called for immediate operation in a trauma centre, for which they had foreseen (German) Freiburg . In response, they were shown a machine-gun and told that "this is a French soldier, accordingly he is going to France!" Understanding that medical arguments were secondarily towards patriotically ones, the crew responded that of course, it was also possible to fly him to Strasbourg, another 30 min flight away. They were permitted the takeoff and flew first over the Rhine, in direction of Strasbourg, but soon made a long bow backwards towards Freiburg. Also this young man survived, for which the gendarmes cannot be granted any thanks.

(**40**) In 1988, some pilots performed a very low flight with a fully boarded new Airbus over Mulhouse's old airport by Habsheim, where an air show was simultaneously being carried out. It could have been a record if they had gone it up again but instead the tail was caught by some trees and the plane was grounded in the wood just North of the roll-off track. Astonishingly, only three passengers were killed upon that occasion while about 150 passengers and crew members were evacuated to the nearby preliminary terminal. This was now used for triage according to an old-fashioned catastrophe-medical principle.

It lasted half an hour before the near situated Euroairport Basel-Mulhouse were informed. Through REGA, information was transferred to German and Swiss units. With one REGA-helicopter, two physicians were brought from the University Hospital of Basle while I and a colleague were flown there from Germany. I shall never forget the view of the crowded building, including some stewardesses with tears in their eyes (whether due to relief or despair, I do not know). Then, however, a doctor approached us and told politely that all seriously injured patients had already been removed to one of the two big hospitals in Mulhouse (in the meantime they have been fused) and there was no need for us any more, but thanks for coming. I asked if we could perhaps use our helicopters in these hospitals for a better distribution to other hospitals (a key point in the management of several victims) but again, he

denied that there was any use for that, after which he kindly showed us the way out so that he could continue his registration. Completely unemployed in this chaos, where ambulances where howling for- and backwards, we strolled into the wreck, which had burned out completely, not revealing how many had been burned with it. The gendarmes starred suspiciously upon us but we were tolerated as long as they anyhow were using one of our helicopters to make area pictures. Then we flew empty back and could just notice that at least our own hospital had mobilized a sufficient amount of helpers who were sent back home. Later that day, the University Hospital of Basle informed that they had received a considerable number of patients with stable vertebral fractures (the typical injury pattern of a severe, axial deceleration) who had been brought with private cars after the blunt landing. Again a hint of that who appears to be well off may not be so, after all.

And then we were better off than a disaster team from German Bad Krozingen which were stopped at the border. I reported this abortive mission in a critical report which was discussed with both the administration of the Euroairport and doctors of the French SAMU-68 (Societé Ambulances Medicalè et des Urgences) in Mulhouse. Perhaps this friendly discussion was not very fruitful but I made the point that even if our help was never needed in France, we should gladly welcome theirs whenever necessary.

Cream and Crisps

(**41**) The opposite of old people are newbornes. For a long time, my greatest fear in emergency service was that of being called to a delivery. The gynaecologists have adapted this „planned emergency" so thoroughly that other physicians are largely lost in this field, due to our lack of experience. In due course, I did get some of that, too. In emergency services, deliveries are mostly completed already when the doctor finally arrives, or it has not come so far yet. The biggest danger is probably associated with stopping an advanced delivery with drugs (if very advanced, even drugs cannot do that). The closed I have been to that experience occurred just in front of our hospital when I arrived after a mission late one evening. A screaming, pregnant woman was supported by some people who tried to comfort her. I followed the call and got the impression that the delivery was taking place already, so we brought her a few meters further into the doorman's small office and placed her on the floor. I shall never forget the face of the doorman on call as I tore down her trousers and soon after drew a baby out, as the magician does with the rabbit of his high hat. I asked him to require enforcement from the maternity department, but he was unable to be of any use for some time afterwards. The baby survived the unusual delivery without any problems.

(**42**) When talking about fear, I come to think of the only mission I had to the victim of a poisonous snake. This was clear from the beginning, so I asked if the snake was still creeping around. As they answered from the Central that it was back in its terrarium, I declared that I would also come. Since it is an exotically animal and the patient with his leg stasis was at first well off, the doctor who had required me and I talked with a specialist at the Tropemedical Department in Basle, who suggested that the patient and the anti-poison would meet each other in Lörrach. We returned there without signal, and in the meantime I got the patient's permission to make some fun at the intensive care unit. I took some rubber rings from the ambulance and put in a plastic bag, at first keeping it hidden at the bag upon admittance. Having explained what I knew about, I suddenly brought forward the bag while saying, „and would you believe that all this trouble could arise from such a small snake?" The two nurses present rescued themselves by escape to the adjacent department while the doctor I had talked to increased his distance of safety considerably. A few hours later, there was nothing to joke about, but the patient managed also this critical phase and was discharged three days later.

(**43**) „I have no time to be ill now," is sometimes heard. Accidents and diseases never comes while planned or even suitable. For the severely injured it may be like the end of the World. To me, it was sometimes necessary to see other aspect to which the involved persons could, understandably, not understand as funny. Such appeared with the collision of a bicycle and an air plane (a small one, after all), which happened at a local aerodrome when a one motored plane was about to start and a man crossed the lawn. The pilot almost succeeded to stop the

plane (or there had been nothing for me to do there), which now was placed vertically with the tail pointing upwards. Beside it, a twisted bicycle bore witness that the collision was not completely avoided while a seriously wounded man let assume that it was possible to survive a collision with an air plane. I arrived with the helicopter and was later occupied for six hours with the operation - not al all funny.

(**44**) Another man survived colliding with a train on bicycle, unfortunately with permanent paraplegia. I arrived by car but required the helicopter to fly the patient to Freiburg where I explained about the accident. Responding the stupid question, which involved patient was present here (anaesthetized and intubated), I answered: „This is the engine driver - you should have seen the cyclist ..."

In Germany, I started at the anaesthesia department of the County Hospital of Eutin, situated in the North between Lübeck and Kiel. The rescue service was a secondary job, but the anaesthesia department was taking care of missions with a rather big Bell helicopter plus a much less utilized ground rescue service (same doctor!). We had many missions but not so many which were particularily necessary. On the other hand, many cases were known where our presence would have been desirable but where we were not asked to come. It remains strange to me that the Europeans (not just the Germans) have not worked for an improvement of this economical mismatch - on the contrary, the emergency physician is increasingly used = for less serious conditions, the central does not care to find out where the doctor could really be of any use but releases the alarm according to a catalogue. Once there, the emergency physician is held up by useless diagnostic measures and time-consuming bureaucracy (increasingly large mission protocols).

Because air rescue has been known in Germany since 1970, it could be expected that helicopter landing places (helipads) would be particularly sophistically. On the contrary, the regional hospital had generally much better landing facilities than the university hospitals, due to various human weak points which shall not be commented further here. If we were going to deliver patients to the University Hospital Eppendorf in Hamburg, it was necessary to interrupt the game at a near football place, an event which occurred rather often. We landed and were with the patient transferred to an ambulance, with which we drove to the young specialists who knew everything better and asked why this and why not that - I believe it has always been so in the university departments. After having received an impressive rebuke, we drived back to the helicopter, where the pilots were always not present. They were gone to visit Aunt Frieda. Later, they came back with a full mouth, cream and crumbs around, and we could fly back to Eutin or fuel in Hamburg's „Fuhlsbüttel" airport. Having experienced this a couple of times, I started to get curious about this Aunt Frieda. Finally, I was joined by another doctor. The patient was well off, so I decided to send him off to learn from the young stars in Eppendorf as a part of his education while I joined the pilots.

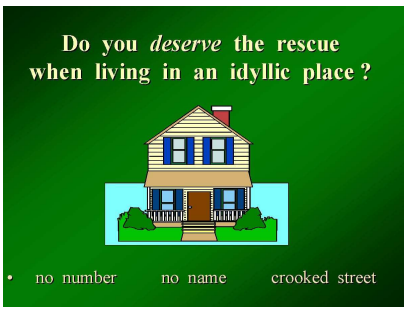
Fig. 14: Aunt Frida's coffee table.

Fig. 15: The helicopter with its equip plus Aunt Frieda (1981).

Aunt Frieda lived in a small garden house at the other side of the street. The walls were decorated with souvenirs from all surrounding helicopter bases, as a counterpart the table was richly decorated with cups and cakes. While we were cosily sitting there [Fig. 14], the pilots were told other the radio that another helicopter was arriving, and soon after we could hear it land, to which Aunt Frieda exclaimed: „Again a human life saved!" Perhaps a bit exaggerated but the table did not offer any room for a controversy. Aunt Frieda made another jar of coffee and soon we could great the other pilots. Meanwhile, we heard the siren of an ambulance leaving in direction of Eppendorf and getting less and less noisy.

(**45**) I think that our pilots had a good time. In Eutin, they were placed for our disposition by the border gendarmes (Bundesgrenzschutz), which in this way had a useful training of their men. While the doctor and paramedics were taking care of a patient with a spinal trauma after a fall from a cherry tree, the pilots took care about the remaining cherries. By the way, it was almost always cherries, seldom other fruits, and having seen their branches break in the most unbelievable fashions, I have decided to buy our cherries at the local market and leave ours in the garden to the birds. One of my colleagues gave up resuscitation - perhaps good so, there was no room for any patient, the helicopter was full of flowers (one of the pilots were getting married).

When I started to work in Lörrach, the helicopter turned out to be much smaller (at first BELL 105S, later Agosta). It belongs to the Swiss Air Rescue (REGA) and is, to increase the confusion, based in the airport of Basle-Mulhouse („Euroairport") on French ground. Until 1987, we were in charge of most of the mission, later the Department of Anaesthesia, Kantonspital Basel took over the vast part of airborne missions. The co-operation between Lörrach and Basle over the border is much better than the co-operation between two cantons in Switzerland. We registered no strive within the co-operation with French authorities - there was no co-operation at all. Fortunately, I was only upon rare occasions active on French ground.



Driving a turn-out car alone was both a fascinating and occasionally a rather hard test. I developed a system for „psychological warfare:" Do not count on those in your own direction, they mostly use their mirrors for cosmetical purposes and even a powerful siren cannot cope with 4x40 Watt. Instead, drive as far to the left that opposing cars are forced to admit that it also concerns them. If not, take care that you are still able to squeeze into your own track (in particular, this was the method which gave me a bad reputation among normal drivers). If 7 cars in front of you hear, brake and drive to the right, there is mostly an eighth music lover who finds that they do this only to give him an occasion to overtake. Cut

all the curves you can, when you can see that there are nobody coming directly against you, et cetera. Not quite seriously, I claimed that you should only brake when it was possible to see the white in the opponents eyes. Strangely enough, I only had a minor accident with the wheels (rather late, a music lover suddenly decided to overtake, forcing me to enter the middle area with its stones), but there were also times where I concluded that this went well but I should never do it again.
It was a particular problem to find street name and house number when you were alone and it was dark – exaggerated by the fact that hardly anybody from the community cares about it, and people are generally not expecting any emergency in their own life. It was no guarantee that the ambulance arrived in advance, since the paramedics often hid it in a backyard and when I complained that they had not left the blue light on, it was as if they had never heard that complaint before. Similarly, when I occasionally asked why they had waited so long for requiring the doctor, it was always due to a deterioration which had happened after their own arrival; you cannot argue against that, it probably also (rarely) happened, so I hoped that alone posing the question might have an effect the next time. Once I drived around and looked for the right house number, I exclaimed in our radio that „whoever lives here does not deserve the rescue!" I made a slide from that experience for a lecture in Triest: „Do you deserve rescue when living in an idyllic place?" (no number, no name, crooked street). Coming home, I realized my own hypocrisy in that our own number would also hardly be found a dark night [Fig. 16]. I ordered a new number, demonstrating how such a number could look like if it should help anything in an emergency. However, without enforcing this as an administrative demand, this effort remains a useless exception.

Fig.16: A hypocrite's recognition resulted in the late improval of our house number - but probably I was the only one in town to do so (Danish text: "nyt" = new, "gammelt nr." = old number).

My last mission as emergency physician in 1997 was a good occasion to stop: a successful resuscitation of a middle age man. Of course, I have also abused the possibility to avoid mentioning missions where I did not make a very brilliant figure. For that part, it is possible to read some of them among the case-reports (also including the new wisdom gained by colleagues) in my book about a professional, physician-supported rescue service – the idea is the we should not necessarily all make the same mistakes for learning from them.

In conclusion

I must say that it was an interesting job. At the emergency site, there were few problems that could not be dealt with – if you know what to do, what may help or at least not deteriorate matters, there is no reason to despair from the task, and it is often a most positive experience being able to offer something that others may not be able to do. Ability of improvisation is a necessary requirement, but stereotypically appearing emergencies call for a standardized attitude. And exactly while I believe to have found an answer to many problems, I have suffered many frustrations from the lacking interest, both regionally and internationally. It has not been qualitatively better that interest has quantitatively improved – on the contrary, it is now even more difficult to favour any solution which is not accepted by the majority. And it is as if this prostitution for old-fashioned and simple solutions, which are generally found in medicine, is even worse in emergency medicine.
As a result, I enjoy the experience which has passed but I do not miss it. Many others have taken my place, there is no vacuum left and after 17 years at the „front," a more quiet occupation can be preferred without getting a bad conscience.