Purpose: The goal was to register physical training volume and to measure changes in physical fitness in soldiers during a peacekeeping mission. The relationship between these factors and motivation for physical training was also investigated.

Methods: Physical training volume was registered and maximal oxygen uptake, 3-km run time, sit-ups, push-ups, and chin-ups were tested before and after 1 year of service for 71 Norwegian soldiers in the international Kosovo Force. Self-determined motivation was measured at the end of the service. Results: Physical training volume was 117 ± 77 minutes/week. The average maximal oxygen uptake decreased by 2.5 ± 0.8% (p < 0.01). Intrinsic motivation positively predicted physical training volume (p < 0.01). Conclusions: A large variation in training volume was found, and only one-third of the soldiers improved physical fitness and maintained body weight. Fostering intrinsic motivation toward physical training is key to increasing training volume. However, obligatory training could ensure a minimum of physical training among the soldiers who were least motivated for physical training.

Introduction

Physical fitness is one of the basic military skills required for soldiers to perform their tasks effectively. Regular physical training is therefore included in soldiers' obligatory educational programs around the world. Physical training facilities in military camps are also part of the welfare service. To improve the quality of physical training, it is important to evaluate training outcomes and how soldiers exercise. Many studies have evaluated the effects of physical training on soldiers' fitness during domestic military service, but such studies are missing for international military missions. Therefore, very little is known about the soldiers' physical training habits and how physical fitness develops in soldiers during international peacekeeping missions.

Motivation is important for health behavior performance and thus, to a great extent, health. It is postulated that understanding motivation is key to the health-promoting efforts of physical activity. To better understand how to increase motivation for physical training among soldiers, it is important to gain knowledge of why soldiers exercise. One of the major theoretical approaches in motivation research in sports is self-determination theory. Self-determination theory explains that individuals can be motivated for different reasons, which range from high to low levels of autonomy. Intrinsic motivation represents the most self-determined motivation and refers to participation in activities for the feelings of pleasure and satisfaction that are derived directly from participation. Extrinsic motivation refers to a variety of regulatory styles (i.e., external and identified regulation) and is characterized by an individual's goal of action being directed by an external consequence, such as a reward, benefit, or punishment. The least self-determined construct in self-determination theory is amotivation, which represents a lack of intention and a relative absence of motivation. Research has identified links between a physically active lifestyle and motivation and has found that individuals who identify training as important and see themselves as being physically active also identify themselves as being more intrinsically, rather than extrinsically, motivated. Much of the motivation research to date has been preoccupied with physical education settings and, to our knowledge, physical training in the military is a virtually untapped milieu for investigating self-determined motivation toward physical training.

The main purpose of the present study was to register the physical training volume and to measure the changes in physical fitness among soldiers in the international Kosovo Force (KFOR). We also wanted to investigate the relationship between these factors and self-determined motivation for physical training.

Participants

The participants were 71 male, Norwegian, infantry soldiers from one company in the international KFOR. The average age at the start of the study was 20.5 ± 1.8 years. Illness, injury, and leave of absence resulted in 12 dropouts from the tests of maximal oxygen uptake (VO$_{2\text{max}}$) and nine dropouts from the measurement of self-determined motivation. The body weight and body height of the tested soldiers before the mission were 80.3 ± 9.7 kg and 181.3 ± 7.4 cm, respectively. The study was approved by the regional ethics committee, and written informed consent was obtained from the soldiers.

Study Design

VO$_{2\text{max}}$, time to exhaustion (TTE), 3-km run time, and maximal numbers of push-ups, sit-ups, and chin-ups were tested before the start of military service in Kosovo and before demobilization, 1 year later. The amount of all physical training in a sweat suit was registered throughout the service, and self-determined motivation for physical training was measured before demobilization.

Measurements

VO$_{2\text{max}}$ and TTE

VO$_{2\text{max}}$ and TTE were assessed by treadmill running using a stepwise incremental protocol with constant incline of 5.2% and...
speed increment of 1 km/hour every 1 minute until volitional exhaustion. The initial speed for each individual was chosen according to a pretest familiarization trial, to ensure that the continuous exercising phase would last 4 to 7 minutes. The participants were encouraged to run as long as possible, and TTE was measured. Before the test, participants warmed up with 20 minutes of running, followed by a 5-minute rest.

The participants wore a nose clip and were connected to the ergospirometry system (Oxycon Pro; Erich Jaeger, Hoechberg, Germany) via a mouthpiece and a three-way directional valve (Hans Rudolf, Kansas City, Kansas). The Oxycon Pro was calibrated with room air and certified calibration gases at 180 kPa (5.55% CO₂ and 94.45% N₂). Adequate ventilation ensured that the gas concentrations in the laboratory were the same as outdoors. The volume sensor (Triple V; Erich Jaeger) was automatically calibrated according to the manual. Volitional exhaustion was the main criterion indicating that VO₂max was achieved, and the highest mean VO₂max over 1 minute was defined as the VO₂max. In cases in which the subject’s exhaustion was in doubt, the following criteria were used to indicate exhaustion: (1) a respiratory exchange ratio (RER) of >1.05, (2) a blood lactate level of >6 mmol/L, and (3) a test duration of >4 minutes. For the second test, the maximal heart rate (HRmax) was evaluated against the HRmax achieved during the pretest.

Heart rate (HR) was continuously measured with a HR monitor (Polar Pacer; Polar Electro Oy, Kempele, Finland), and the highest HR during the test was defined as the HRmax. The blood lactate level was measured with an enzymatic method (YSI 1500 Sport; Yellow Springs Instruments, Yellow Springs, Ohio). A blood sample was taken from a fingertip 3 minutes after exercise and analyzed for lactate concentration. The lactate analyzer was calibrated with a 5 mmol/L lactate standard, and linearity was controlled with a 15 mmol/L lactate standard. Calibration was accepted when values were within 4.9 to 5.1 mmol/L and 14.0 to 15.7 mmol/L, respectively.

Body weight was measured by using a digital scale (model 708; Seca Corp, Hanover, Maryland), with participants wearing T-shirts, shorts, and socks. Height was measured by using a stadiometer (model 708, Seca Corp).

The tests were performed in a mobile test laboratory at sea level in Norway before mobilization and at ~500 m above sea level in Kosovo before demobilization. No difference in VO₂max for untrained participants has been seen between these altitudes. To achieve the same ambient temperature inside the laboratory as in Norway, air conditioning and a camouflage cloth stretched above the test container were used in Kosovo.

**Standard Military Tests**

Aerobic endurance was assessed as the time for a 3-km run, performed outdoors on a level paved surface under similar weather conditions in Norway and Kosovo. Sit-ups represented a test of muscular endurance of the trunk and hip flexors. The starting position was a supine position with legs at a box, 90° at the knees, and held by a partner. The upper body was raised in such a way that one elbow touched the opposite knee. Push-ups represented a test of muscular endurance of the arm, shoulder, and chest. The participants started with straight body, with the chest and cheek touching the floor. The upper body was raised until the arms were straight. Chin-ups represented a test of arm and shoulder strength. The starting position was hanging freely from a bar using an overhand grip, with straight arms and legs. The chin was pulled over the bar. For sit-ups, push-ups, and chin-ups, the maximal number of repetitions was counted.

Aerobic endurance was assessed as the time for a 3-km run, performed outdoors on a level paved surface under similar weather conditions in Norway and Kosovo. Sit-ups represented a test of muscular endurance of the trunk and hip flexors. The starting position was a supine position with legs at a box, 90° at the knees, and held by a partner. The upper body was raised in such a way that one elbow touched the opposite knee. Push-ups represented a test of muscular endurance of the arm, shoulder, and chest. The participants started with straight body, with the chest and cheek touching the floor. The upper body was raised until the arms were straight. Chin-ups represented a test of arm and shoulder strength. The starting position was hanging freely from a bar using an overhand grip, with straight arms and legs. The chin was pulled over the bar. For sit-ups, push-ups, and chin-ups, the maximal number of repetitions was counted.

The results for sit-ups, push-ups, and chin-ups were each given a grade according to military regulations, and the mean of these three grades was used as the grade for strength. If all three before/after tests were not performed, then the average strength test grade was based on the number of tests that were performed.

**Physical Training Registration and Self-Determined Motivation**

All 71 soldiers reported their daily physical training on a monthly report form. The monthly response rate was 85 ± 8%. Training volume, frequency, and type of activity were reported for all obligatory and voluntary physical training in a sweat suit. Registration of training started 45 days after arrival to Kosovo and ended 3 weeks before demobilization. Physical training volume is reported in minutes per week.

Self-determined motivation was measured at the end of the service by using the Situational Motivation Scale (SIMS). The SIMS questionnaire identifies four distinct regulation levels of self-determined motivation, namely, intrinsic motivation, identified regulation, external regulation, and amotivation.

### Statistical Analyses and Data Processing

Student's t test was used to compare means between two samples for a given variable. One-way analysis of variance with Tukey's post hoc tests was used to examine the significance of differences between more than two samples. A bivariate correlation analysis with the Pearson correlation coefficient was used to estimate correlation between two factors.

Power analysis revealed that the reported differences in body weight, VO₂max, TTE, and 3-km run time during KFOR service gave a power between 87% and 100%. With the number of subjects included, we had a power of >80% to report a 2.0% difference in body weight, a 2.2% difference in VO₂max, a 5.0% difference in TTE, and a 3.0% difference in 3-km run time, given the observed SDs of the changes in these variables.

A principle component factor analysis was first conducted for the SIMS. To examine how the four self-determined motivation dimensions predicted physical training volume, we conducted a simultaneous multivariate regression analysis, with the four motivational dimensions as predictor variables and physical training volume as the criterion variable. After a significant finding emerged that indicated intrinsic motivation as a significant predictor, we conducted post hoc analyses by creating two groups, high intrinsically motivated (n = 25) and low intrinsically motivated (n = 19), based on an extreme median split (±0.25 × SD). To determine whether the groups differed in physical training volume, a one-way analysis of variance was conducted. A p value of <0.05 was regarded as statistically significant. Results are presented as mean ± SD or mean ± SEM; SD is used if not otherwise indicated. For the regression analyses, B (unstandardized coefficient) and 95% confidence interval are reported.

### Results

The average physical training volume during the final 9 months of service was 117 ± 77 minutes/week, in 1.8 ± 1.2
sessions. Weekly training consisted of $85 \pm 70$ minutes of strength training in $1.3 \pm 1.0$ sessions and $32 \pm 31$ minutes of endurance training in $0.6 \pm 0.5$ sessions. Forty-three percent of the participants trained >2 hours/week, whereas 28% trained <1 hour/week. The volume of physical training varied over the year (Fig. 1). During service, the average VO\(_{2\text{max}}\) decreased $2.5 \pm 0.8\%$ (mean ± SEM, $p < 0.01$) (Table I), independent of initial VO\(_{2\text{max}}\). The SDs of the changes in body weight, VO\(_{2\text{max}}\), and TTE were $4.2$ kg, $3.2$ mL/kg per minute, and 0.8 minutes, respectively. There were significant but only minor differences in HR\(_{\text{max}}\), RER, and blood lactate level between the before and after VO\(_{2\text{max}}\) tests ($198.6 \pm 6.6$ beats/minute vs. $197.2 \pm 7.8$ beats/minute, $1.09 \pm 0.07$ vs. $1.12 \pm 0.07$, and $8.0 \pm 1.5$ mmol/L vs. $8.7 \pm 1.6$ mmol/L, $p < 0.05$, respectively).

A significant correlation was found between training volume and change in VO\(_{2\text{max}}\) during Kosovo service (Fig. 2). Training volume also correlated with VO\(_{2\text{max}}\) after Kosovo service ($r = 0.45$, $p < 0.01$, $n = 58$) but not with VO\(_{2\text{max}}\) before Kosovo service. To study the variation of the change in VO\(_{2\text{max}}\) during service, the participants were divided into three equal-sized groups according to the change in VO\(_{2\text{max}}\) in during service. Table II shows these groups' data for VO\(_{2\text{max}}\), body weight, and training volume. Group A included the soldiers with the largest decrease in relative VO\(_{2\text{max}}\), group B included the soldiers with the medium change in relative VO\(_{2\text{max}}\), and group C included the soldiers with an increase in relative VO\(_{2\text{max}}\). Group C had the highest training volume and was the only group that maintained body weight.

During service, the average 3-km run time increased by $4.8 \pm 1.0\%$ (mean ± SEM, $p < 0.01$), and the SD of change was 0.9 minutes. There were no changes in the numbers of sit-ups and push-ups during service, whereas the number of chin-ups increased ($p < 0.01$) (Table III). Training volume correlated with the average strength test grade (Table III) before ($r = 0.27$, $p = 0.043$, $n = 58$) and after ($r = 0.35$, $p < 0.01$, $n = 59$) Kosovo service.

### Table I

<table>
<thead>
<tr>
<th></th>
<th>n</th>
<th>Before Mission</th>
<th>After 1-Year Mission</th>
</tr>
</thead>
<tbody>
<tr>
<td>Body weight (kg)</td>
<td>59</td>
<td>$80.3 \pm 9.7$</td>
<td>$83.1 \pm 11.3^*$</td>
</tr>
<tr>
<td>VO(_{2\text{max}}) (mL/kg per minute)</td>
<td>58</td>
<td>$55.1 \pm 5.0$</td>
<td>$53.7 \pm 5.9^*$</td>
</tr>
<tr>
<td>VO(_{2\text{max}}) (L/minute)</td>
<td>58</td>
<td>$4.40 \pm 4.9$</td>
<td>$4.44 \pm 5.1$</td>
</tr>
<tr>
<td>TTE (minutes)</td>
<td>59</td>
<td>$5.57 \pm 0.75$</td>
<td>$5.15 \pm 0.92^*$</td>
</tr>
</tbody>
</table>

Values are mean ± SD.

*Significant ($p < 0.01$).

A four-factor structure accounted for 73% of the total variance explained by self-determined motivation. The $\alpha$ coefficients for the four factors were as follows: intrinsic motivation, 0.78; identified regulation, 0.84; external regulation, 0.83; amotivation, 0.89. Multivariate regression analysis of the four regulation levels of self-determined motivation and training volume revealed a significant overall statistic ($R^2 = 0.18$, $F = 3.08$, $p = 0.023$). Furthermore, intrinsic motivation positively predicted physical training volume ($\beta = 35.9$; 95% confidence interval, 11.7-58.0; $n = 62$; $p < 0.01$). No other significant results emerged between the other regulations of self-determined motivation and physical training volume. No relationship between self-determined motivation and VO\(_{2\text{max}}\) was found. Post hoc analyses of high and low intrinsic motivation revealed that the high intrinsic motivation group trained $141 \pm 78$ minutes/week, 70% more than the low intrinsic motivation group ($p < 0.05$).

### Discussion

The KFOR soldiers completed ~2 hours of physical training in a sweat suit per week, and 73% of this training volume was individual strength training. Most of the physical training was
Physical Fitness and Motivation

Average training volume (min·week⁻¹)

Fig. 2. Relationship between training volume and change in \( \text{VO}_{2\text{max}} \) during 1 year of service in the KPOR (\( r = 0.46, p < 0.001, n = 58 \)).

TABLE II

INITIAL VO\(_{2\text{max}}\), PERCENTAGE CHANGE IN VO\(_{2\text{max}}\), BODY WEIGHT, PERCENTAGE CHANGE IN BODY WEIGHT, AND PHYSICAL TRAINING VOLUME DURING KOSOVO SERVICE FOR PARTICIPANTS DIVIDED INTO THREE GROUPS ACCORDING TO CHANGE IN VO\(_{2\text{max}}\) DURING KOSOVO SERVICE

<table>
<thead>
<tr>
<th></th>
<th>Group A (n = 20)</th>
<th>Group B (n = 19)</th>
<th>Group C (n = 19)</th>
</tr>
</thead>
<tbody>
<tr>
<td>VO(_{2\text{max}}) before mission (mL/kg per minute)</td>
<td>53.9 ± 6.3</td>
<td>56.4 ± 3.8</td>
<td>55.0 ± 4.3</td>
</tr>
<tr>
<td>Percentage change in VO(_{2\text{max}})</td>
<td>-8.3 ± 2.9</td>
<td>-2.9 ± 1.1(^a,b)</td>
<td>4.2 ± 0.4(^a)</td>
</tr>
<tr>
<td>VO(_{2\text{max}}) before mission (mL/minute)</td>
<td>4398 ± 540</td>
<td>4366 ± 65</td>
<td>4440 ± 161</td>
</tr>
<tr>
<td>Percentage change in VO(_{2\text{max}})</td>
<td>-2.8 ± 4.1(^a,b)</td>
<td>1.4 ± 3.1</td>
<td>3.5 ± 4.3(^b)</td>
</tr>
<tr>
<td>Body weight before mission (kg)</td>
<td>82.3 ± 12.5</td>
<td>77.6 ± 8.5</td>
<td>80.9 ± 7.1</td>
</tr>
<tr>
<td>Percentage change in body weight</td>
<td>6.3 ± 5.0(^a)</td>
<td>4.5 ± 3.1(^b)</td>
<td>-0.4 ± 3.5(^c)</td>
</tr>
<tr>
<td>Physical training volume (minute/week)</td>
<td>77 ± 48(^a)</td>
<td>136 ± 80</td>
<td>169 ± 76</td>
</tr>
<tr>
<td>Endurance training (minute/week)</td>
<td>31 ± 22</td>
<td>27 ± 23</td>
<td>48 ± 46</td>
</tr>
<tr>
<td>Strength training (minute/week)</td>
<td>46 ± 35(^a)</td>
<td>109 ± 78</td>
<td>121 ± 71</td>
</tr>
</tbody>
</table>

Values are mean ± SD.

\(^a\)Significantly different from the other groups (\( p < 0.01 \)).

\(^b\)Significant change during mission (\( p < 0.01 \)).

\(^c\)Significantly different from the other groups (\( p < 0.05 \)).

Voluntary, and the variation in training volume was large. VO\(_{2\text{max}}\) and the average grade for sit-ups, push-ups, and chin-ups correlated with physical training volume. The soldiers with the largest decrease in VO\(_{2\text{max}}\) carried out less than one-half of the training volume of the group with an increase in VO\(_{2\text{max}}\). Soldiers reporting high intrinsic motivation reported higher training volume than did those reporting low intrinsic motivation.

There is no regulation prescribing obligatory physical training for Norwegian soldiers during international missions. Military tasks are the main priority but, if possible, the regulations for domestic service are followed. These regulations indicate a minimum of 2 hours of physical training in two sessions per week. In the present study, physical training was registered from September to June. A mean of 2 hours of physical training per week was carried out only in January and February, when the soldiers had few military tasks. From September to December, the Norwegian force carried out many military missions, which resulted in a much lower training volume, compared with January and February. Because of a riot in Kosovo in March, military activity increased, and the average training volume in March and April decreased.
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The average reduction in VO$_{2\text{max}}$ during 12 months in Kosovo was 2.5 ± 0.8% (mean ± SEM, $p < 0.01$). This reduction could be a reason for the reduced performance in the 3-km running test and the reduced TTE during the VO$_{2\text{max}}$ test. There were only minor differences in the physiological parameters of HR, blood lactate level, and RER, indicating that the subjects' efforts to achieve the best possible test results were similar during the before and after tests. A similar reduction in VO$_{2\text{max}}$, was found for the same soldiers during their 6 months of Norwegian military service before the Kosovo service. However, the physical training volume was much higher during the military service in Norway and included 3 to 4 hours/week of vigorous physical activity, such as marching with a backpack, battle training, and movement in rugged terrain. These activities were performed in uniform, mostly at low intensity. During the Kosovo service, most such activities ended and almost all transportation was by vehicle. However, the decrease in low-intensity training volume did not lead to a more-rapid decrease in VO$_{2\text{max}}$, which could be attributable to the fact that the amounts of physical training in a sweat suit were very similar before and during service in Kosovo. This physical training was normally carried out at higher intensities than vigorous physical activity in uniform. According to several studies, high training intensity is crucial for improving VO$_{2\text{max}}$, and a 60 to 70% reduction of training volume may not reduce VO$_{2\text{max}}$ as long as the training intensity is maintained.

The variations in both training volume and changes in VO$_{2\text{max}}$ were large. The soldiers with an increase in VO$_{2\text{max}}$ (Table II) performed more than twice the training volume, compared with those with the largest decrease in VO$_{2\text{max}}$. There was no significant difference in the endurance training volume, but group C had a much higher strength training volume than group A. Improvement in VO$_{2\text{max}}$ as a result of most forms of resistance training is unlikely to occur in aerobically trained and untrained individuals. The lone exception to this seems to be circuit weight training, which was not a common strength training method among these soldiers. There was no significant difference in body weight among the three groups before the Kosovo service. However, the soldiers who increased their VO$_{2\text{max}}$ were the only soldiers who maintained their body weight during the 1-year period. The improvement in relative VO$_{2\text{max}}$ (milliliters per kilogram per minute) in this group was therefore attributable to the 3.5 ± 1.0% (mean ± SEM, $p < 0.01$) increase in absolute VO$_{2\text{max}}$ (liters per minute). The soldiers in group A had the largest increase in body weight, and this group was the only group with a decrease in absolute VO$_{2\text{max}}$. Group A also had the lowest training volume, indicating that the increase in body weight was probably attributable to an increase in body fat, rather than musculature. A reduced level of vigorous military activity in uniform during the peacekeeping mission could be part of the explanation for why these soldiers gained more body weight during the KFOR mission, compared with their earlier military service.

Body weight is affected by energy intake and energy expenditure. Because no significant correlation between physical training volume and change in body weight was found, it could be assumed that those who trained the most were also most aware of their diet. Increased motivation toward a healthy diet, as well
as good exercise habits, is therefore important for improving or maintaining the soldiers’ fitness.

Of the four different regulatory styles in the SIAMS, only intrinsic motivation toward physical training was found to positively predict physical training volume. A 70% higher training volume was found in the high intrinsic motivation group, compared with the low intrinsic motivation group. These findings suggest that an important factor in increasing training volume is to increase intrinsic motivation toward training, especially when most of the physical training is voluntary or individual, as in this study.

Intrinsic motivation is entirely connected to the individual needs of autonomy, competence, and relatedness. Although research is lacking from within a more-regulated environment, such as a military setting, it is argued that creating an environment that values these individual needs will increase the soldiers’ intrinsic motivation toward physical training. Research among both youths and physical education students has indicated that allowing more autonomy in choosing the types of physical activities in which to participate may increase intrinsic motivation toward exercise. Moreover, it is proposed that enjoyment may be a factor in increasing intrinsic motivation. Also, the need for competence leads people to seek tasks that are challenging within their capacities. If soldiers experience an environment that highlights skill and competence development, then this may influence intrinsic motivation toward physical activity. Relatedness refers to feeling connected to others and having a sense of belonging, both with other individuals and with one’s community. Obligatory joint physical training sessions could contribute to team building and increase the esprit de corps and, through this, also increase soldiers’ intrinsic motivation to exercise.

More obligatory physical training could, at least in the short term, increase extrinsic motivation and lead to an increased training volume. However, it has been hypothesized that external regulation may have negative consequences, such as the feeling of pressure, anxiety, and lack of enjoyment of the exercise regimen, leading some people to abandon exercise entirely. However, the soldiers in the present study chose military service, where fitness is emphasized as an essential quality, over community service; therefore, it is possible that these soldiers were already intrinsically motivated toward physical training before enlisting and this carried over into the military setting. Furthermore, whereas intrinsically motivated people feel comfortable in an autonomous environment, externally motivated individuals are likely to thrive in more-structured environments. It is possible that, under certain circumstances, externally motivated soldiers may participate in obligatory physical training without negative motivational outcomes.

Conclusions

Most of the physical training during Kosovo service was voluntary or individual strength training. The variations in physical training volume and physical fitness were large, and one-third of the soldiers managed to improve their aerobic fitness. Because soldiers who reported high intrinsic motivation also reported higher training volume, compared with those who reported low intrinsic motivation, fostering intrinsic motivation is key to increasing voluntary physical training in the long term. To ensure a minimum of physical training for all soldiers, obligatory physical training should be organized. However, obligatory physical training should be carried out within a context that emphasizes autonomy, competence, and relatedness and should focus on endurance training, to provide variability in training activities.

Acknowledgments

We thank Dr. Pierre-Nicolas Lemyre for useful comments on the article. We also acknowledge Capt Stig Hjelseth and Anders Aandstad for help with data collection and Jennifer Arnesen for English revision of the article. The study was funded by the Norwegian School of Sport Sciences/Defense Institute.

References


Letters to the Editor

To the Editor
I read with interest the detailed article by Major Richard Malish [Milit Med 2006, 171 (3): 224-227] describing his experiences of medical care with the 250th Forward Surgical Team (Airborne) during a military operation into Northern Iraq in 2003. We have used his informative article as a valuable planning tool for our own current operations in Southern Afghanistan.

As senior surgeon in the FST of 23 Air Assault Squadron (the successor to 23 Parachute Field Ambulance), I must take exception however at the following lines in the article: “The jump was historic because of the inclusion of the FST. The FST became the first such team to perform a combat jump since World War II.” This is incorrect!

On 5 November 1956, an FST from 23 Parachute Field Ambulance jumped with the Third Battalion, The Parachute Regiment into El Gamil Airfield in Egypt as part of Operation Musketeer – The occupation of the Suez Canal Zone. Major (later Major-General) Norman Kirby was the senior surgeon. This event is vividly described in ‘Airborne to Suez’ by Sandy Cavanagh who as a Lieutenant was the Regimental Medical Officer to 3 Para. He was himself wounded in the eye by shrapnel during the drop. The operation itself was a military success with all intended objectives being achieved. International political pressure later led to the force being withdrawn. Overall, 660 men took part in the drop.

Lt Col Paul J. Parker FIMC FRCSed RAMC