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Empirical Prediction of Physiological Response to Prolonged Work in Encapsulating Protective Clothing

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TABLE OF CONTENTS

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LIST OF ABBREVIATIONS

ACGIH: American Conference of Governmental Industrial Hygienists- An Industrial Hygiene organization which establishes guidelines for heat stress exposure in industry. These guidelines are adopted more or less in their entirety by NIOSH in setting the heat stress standards.

C.V.: The coefficient of variation- this is a measure of the accuracy of a regression equation derived by dividing the Syx (see below) by the group mean average and multiplying by 100. It is the single best applied measure of the accuracy of prediction.

HR: Heart Rate- simply the rate at which the heart beats. HR is very useful because it simultaneously reflects work rate and heat strain. HR0 is the HR immediately after bench stepping and HR2 is at 2 minutes after stepping and HR5 is at 5 minutes after stepping.

MTsk: Mean skin temperature-- since skin temperatures vary at different places on the body's surface, this is a weighted mean of three different locations: chest, calf and forearm. Since almost all heat is ultimately lost through the skin, this temperature reflects in part how rapidly heat is being lost. When evaporation occurs more readily, mTsk falls, so measured mTsk is a function of heat delivery to the skin by the blood and heat removal by convection, conduction and evaporation. It is weighted to represent how much surface area is represented by a given temperature. It is assumed to be representative of about 20% of the total body mass.

"p<.05, (p>.05)" - Used in inferential statistics to show that there is a less than (greater than) 5% chance of obtaining so large a difference between two trials, or in our case, correlation or regression coefficient, by chance alone. That is, p <.05 means that in 95 or more of 100 trials of any 50 test subjects that we picked at random, we would expect to get a difference just as large or larger. P <.05 is therefore a measure of likelihood that results occurred by luck and not because of a true effect, e.g. <5% chance of an error due to bad luck in picking this particular sample. We use probabilities because we are trying to infer these results to workers in the field, and since we cannot test every worker we must use samples and infer to the population composed of all workers. This procedure is very similar to quality control sampling.

PC: Protective clothing- in this case Saranex coated Tyvek® barrier protective coveralls with hood, full face gas protective mask, gloves, and shoe covers.

RPE: Rating of perceived exertion- a measure of the subject's overall perception of how hard he is working at a given point in the test. See Appendix C.

SD: Standard deviations- a measure of statistical dispersion or central tendency. It can roughly be used to quickly guage the approximate magnitude of some difference among scores for that measure.

Syx: the standard deviation of the residuals. This is a measure of the accuracy of the prediction model when this number is compared to the group mean (see C.V. defined above), derived by taking the standard deviation of the errors of prediction for each subject.

Thermal Comfort: A measure of the subject's overall perception of how comfortable he is with respect to temperature at a given point in the test.

TLV: Threshold Limit Values, in this particular case, limits to work duration and requirements for rest duration and scheduling for worker in PC dependent upon work rate, environment and type of PC.

Tre: Rectal temperature. This is an indicator of the deep body temperature. Deep body temperature can only be measured via esophageal and rectal thermometers. Since it is assumed to be representative of about 80% of the total body mass, it is the most crucial measure of heat strain.

TWT: Total work time or work tolerance time, i.e. the sum of all work bouts under a particular combination of environment and work rate.

VO_2: Oxygen uptake- a measure of aerobic metabolic work rate. Maximal oxygen uptake is a measure of aerobic state of physical conditioning, and physical work capacity.

WBGT: Wet Bulb Globe Temperature- this is a weighted mean of dry, wet, and globe temperatures which is a popular metric for describing hot environments because it incorporates measures of dry bulb temperature, relative humidity, and radiant heat as well as air motion (we use natural rather than psychometric wet bulb).

18/1.0: For this study the work bout performed in the following conditions-continuous work at 300 Kcal/hr (VO_2 of 1 L/min, at WBGT= 18°C (i.e. room temperature).

18/1.3: For this study the work bout performed in the following conditions-30 min work at 400 Kcal/hr (VO_2 of 1.33 L/min) succeeded by 30 min rest at 60 Kcal (time weighted avg of 230 Kcal/hr) all at WBGT=18°C.

26/1.0: For this study the work bout performed in the following conditions-continuous work at 300 Kcal/hr in WBGT=26°C.

26/1.3: For this study the work bout performed in the following conditions-30 min work at 400 Kcal/hr (VO_2 of 1.33 L/min) succeeded by 30 min rest at 60 Kcal (time weighted avg of 230 Kcal/hr) all in WBGT of 26°C.

LIST OF FIGURES:
NONE

LIST OF TABLES

SIGNIFICANCE OF FINDINGS

It was somewhat surprising that the subject's performance on the bench stepping did not yield a more accurate prediction of work performance in PC, since our earlier pilot work with a small sample yielded high Rsquares. This in part might be attributed to the relative homogeneity of the test sample. On the other hand, the work force in PC, while not as homogenous as that of the study, is relatively homogenous in that it is predominated by young, relatively fit males. Thus the prediction problem in the work force is not altogether different from that of this study. Though the prediction was not nearly as good as was hoped, some significant variance (13-29%) was accounted for by models based upon the bench stepping performance. This finding may be of great utility in future attempts at modeling human responses in PC.

That we were unable to predict with great success does not establish that it cannot be done, but we feel these results do shift our emphasis towards more effective worker monitoring. Barnard et al. (1994) have suggested that monitoring worker's chest temperature and heart rate may provide sufficient real-time information for determining safe levels of heat strain. However, our study of this approach (Reneau and Bishop, In Press) found that Barnard's equipment was not specific nor sensitive enough for routine industrial applications. Based upon the results of the present study, we suggest that future research focus on more effective means of monitoring workers in PC, rather than attempting to predict performance on a group or individual basis.

Finally, we feel that this approach may prove useful as a means of establishing safe working limits for groups of workers. For example based upon the equations derived, workers may be classified fairly accurately as highly-tolerant or highly intolerant of work in PC in hot environments. Whereas we acknowledge the political ramifications of such classifications, none-the-less, classification based upon field tolerance tests offers the best opportunities for safely increasing worker productivity in PC.

USEFULNESS OF THESE FINDINGS

These data will be of use to future investigation of the physiological responses of workers to PC use in hot environments. These results provide an initial basis for institution of a worker classification paradigm designed to classify the tolerance of workers to work in PC. That is, a bench step field test could be used to simply determine whether workers are highly tolerant or intolerant of work in PC. Selecting workers into and out of this pool would improve safety and productivity.

We recommend that effort be devoted to development of techniques for individually monitoring workers in PC. This approach singularly or in combinations with other techniques may be most effective in protecting workers while maximizing productivity.

ABSTRACT

Use of present American Conference of Government Industrial Hygienists (ACGIH) threshold limit values (TLV's) for work in protective clothing (PC) greatly limits productivity by restricting workers to limits sufficient to protect about 95% of all workers. Since worker responses to work in PC varies greatly, many workers are prematurely removed from work, greatly reducing productivity. If individual responses could be predicted from simple field tests, then perhaps work standards could be raised such that more tolerant workers would have more liberal work periods allowing for safe increases in productivity in PC. Previously, we published equations derived from a small sample of workers in military PC, which permitted us, with a high degree of accuracy, to predict work response from simple field test measures in PC (Bishop et al., 1994). In the present study the same approach was attempted using a much larger sample to predict worker work tolerance times (TWT) in two different environments and two different work rates from a simple field test involving bench stepping in room temperature while wearing PC. Although useful equations were developed to account for 13% to 24% of the variance in work performance, the precision of these equations was much lower than that earlier observed in the pilot tests. In view of these results, it is suggested that simple screening measures be used to identify particularly tolerant and intolerant workers, but that management of workers in PC will need to rely upon individual personal monitoring or some combination of field tests plus other measures.

INTRODUCTION

When workers are required to perform physical labor in hazardous environments at temperatures greater than 21°C (70°F) the heat storage consequent to the use of protective clothing results in a risk of heat-injury to the worker and work capacity is reduced (Bishop et al. 1990, 1991a, 1991b; White et al., 1989; Faff et al., 1989; Mihal, 1981; Atterbom et al., 1978; Joy et al., 1968; Goldman, 1963). Current prediction methods, although useful in many applications, do not provide sufficient accuracy for individualized prediction. The use of group mean predictions such as the American Conference of Government Industrial Hygienists (ACGIH) Threshold Limit Values (TLVs) puts some personnel at risk, while at the same time other workers are under-utilized (Bishop et al., 1990) and this presents two major disadvantages: 1) Workers are so constrained by the very conservative limits needed to protect most workers that their individual productivity is substantially reduced, 2) Because productivity is so compromised, and because some managers undoubtedly observe the overly conservative nature of the limit values, it can reasonably be presumed that the TLV's are violated routinely. Since there are no alternative resources for managing personnel in this situation, the net result can be increased rather than decreased risk to workers.

The purpose of this study was to develop a technique for predicting physical work capacity of workers in these situations based upon field measurements gathered in a short-term work task

performed in protective clothing in a mild ambient environment. This work built upon recent work done in our laboratory (Bishop et al., 1992) as well as earlier work of Kenny et al. (1986), and Shvartz et al. (1977). Specific Aims were to:

1) Test the generalizability, stability, and validity of, and refine the multiple regression equations developed in the previous study, (Bishop et al, 1992) and

2) Derive new equations as needed for other environments and work conditions.

The results of this study may be immediately useful in maximizing worker productivity while minimizing safety risks.

METHODS

Subjects for this experiment were 55 young male volunteers recruited from the local community. Of these, 50 subjects completed all phases of testing. This was a heterogeneous group between 18 and 40 years of age, and included 9 African Americans, 4 Asians, 1 American Indian, 1 Hispanic. Females were not included in this study because of concerns for safety during high heat exposures of subjects who might be pregnant. All subjects provided written informed consent in accordance with University policy. Volunteers were informed of the details of their participation in the study and given a physical and medical

history. Those subjects passing medical criteria were brought to the laboratory where they performed a continuous grade incremented treadmill test of maximal oxygen uptake (VO_2) beginning at 6 or 7 mph (K/hr) with a 2% grade increase every two minutes to exhaustion.

Since many industrial personnel required to wear PC would not normally be deliberately acclimatized, subjects for this study were not acclimatized, and experienced varied degrees of acclimation since testing began in February and continued through November in a southern U.S. state. Use of unacclimatized subjects theoretically provided a more conservative prediction model. Additionally, the value of acclimation or acclimatization for workers in PC is controversial. Increased sweating consequent to acclimation, under semi-or non-permeable garments, would not be effective for cooling and would increase the potential for dehydration.

Immediately following the VO_2max test, subjects donned the PC and performed a practice bench step test to familiarize them with the test protocol. Subjects then performed two identical bench stepping tests separated by at least 24 hours. Work VO_2 was measured during the bench-stepping to provide some measure of the physical stress of this test.

On a later date on separate days at least 48 hours apart, after donning the PC, rectal thermistor, 3 skin thermistors, and ECG harness, subjects underwent each of the following treatments and environments in counterbalanced order:

1) Continuous work at 300 Kcal/hr (VO_2 of 1 L/min, at WBGT= 18°C (i.e. room temperature), referred to as 18/1.0
2) 30 min work at 400 Kcal/hr (VO_2 of 1.33 L/min) succeeded by 30 min rest 60 Kcal(time weighted avg of 230 Kcal/hr) all at WBGT=18°C referred to as 18/1.3
3) Continuous work at 300 Kcal/hr in WBGT=26°C, referred to as 26/1.0
4) 30 min work at 400 Kcal/hr (VO_2 of 1.33 L/min) succeeded by 30 min rest 60 Kcal(time weighted avg of 230 Kcal/hr) all in WBGT of 26°C, referred to as 26/1.3.

[WBGT of 18 °C (T_{db}=21, T_{wb}=17 C; 70 °F 67%); 26 °C WBGT (T_{db}=31, T_{wb}=23, T_{gl}=34 °C; i.e. 88 °F, 51%rh))

All rest was performed with the gloves and gas protective mask removed and PC removed to the waist. Resting metabolic rate was assumed to be 60 Kcal/hr. Work consisted of 15 min of walking at 1.34 m/sec (3 mph) followed by 5 min of arm curls with 14.6 kg of weight, with this work sequence repeated until the specified time limit. Treadmill grade and curl rate were set to provide the appropriate time weighted metabolic average.

Subjects were stopped by investigators if: 1) rectal temperature (Tre) exceeded 38°C, or 2) heart rate (HR) was within 10 beats of measured maximal heart rate, or 3) subject reported extreme fatigue, feelings of chill, lightheadedness, or other symptoms of heat injury or extreme fatigue. Subjects were able

to stop work at any time. When Tre fell below 37.5°C Tre, and HR and subject felt rested, work resumed. Subjects were allowed water ad libitum during both exercise and rest. Work continued for 8 hours total time including donning the PC, or subject refusal to continue. Total work time (TWT) was total number of minutes worked. Rest time was the time sitting quietly in the same environment with the mask and gloves removed and the upper half of the protective coveralls pulled down to the waist.

Tre, skin temperatures, and HR measures were monitored continuously and recorded every 5 min. Tre was recorded from a thermistor located 8 cm beyond the rectal sphincter. Skin temperatures were recorded from surface thermistors and Tre's were output to an Isothermex (Columbus Inst. Inc.) computer data acquisition system. Heart rates were recorded from a heart watch (Polar CIC, Inc.). VO_2max and walking VO_2 were collected with standard techniques using a Sensormedics MMC1. Mean skin temperature (mTsk) was calculated from skin temperatures of the chest, forearm, and calf, all on the right side of the body using the method of Burton (1935).

Rating of perceived exertion (RPE) was determined by using the Borg scale (Borg, 1973). The thermal sensation scale used was a 0.0 to 8.0 scale, in increments of 0.5, modified as per Vokac et al., (1976). At the beginning of each continuous treadmill walk/arm curl cycle, subjects were asked their RPE and thermal rating. When subjects indicated they anticipate stopping due to fatigue, or just before the subject's Tre exceeded 38 °C,

these same measures were again collected. Following rest, if the subjects again began walking, the measures were collected as before.

Clothing

PC consisted of underwear worn under a 50% cotton/polyester long-sleeved shirt and trousers. The outer-wear consisted of a one-piece Saranex suit. The respirator was a half-face piece type. Boots were PVC covers worn over the subject's own athletic shoes and socks. PVC gloves were worn over cotton liners.

Pre- and post- experiment nude and clothed body weight were measured to 25 g on a calibrated beam balance scale. Sweat production and loss were estimated from nude and clothed body weight changes corrected for water consumption and urination volumes.

Data Analyses

Data were analyzed using Pearson product-moment correlation and multiple regression analyses between predictor variables and individual measures of work performance in PC including tolerance time and rate of change of Tre during work. A five percent value of probability (alpha value of $p<.05$) was used for tests of significance. SAS Max R^2 and Stepwise procedures were utilized (SAS, Inc, 1985). Reliability of work performance in PC has been previously determined (Bishop et al., 1989).

After correlating total work time (TWT) with the independent

variables, each of the four combinations of environment and work rate (18 and 26 °C, at 1.0 and 1.3 L/min each) was predicted separately from the bench stepping data. Stability (defined here as a measure of the consistency of the regression coefficients across groups of workers) was determined by initially dividing the subjects into two groups (odd and even identification numbers) so that two independent models were derived. These two models were compared to each other and the originally derived equation (Bishop et al. 1994) to gauge stability. A final model was derived from the pooled data of all subjects.

Prediction was attempted with previously derived equations (Bishop et al., 1994) and also with revised equations derived from one half of the total data set. Measurement of all subjects at multiple temperatures and work rates permitted a preliminary determination of the generalizability of this approach with regard to a different work intensity and environment.

RESULTS

Subject physical characteristics are shown in Table 1. Means and standard deviations (SD) for the bench stepping data are shown in Table 2. Table 3 is the test-retest correlations for bench stepping sessions 1 and 2. Table 4 is the mean and SD performance data for each of the 4 test conditions (i.e. two environments with two work rates). Correlations between individual total work time for each of the four combinations of work rate and environments and selected bench step variables are

shown in Table 5 for each bench step session.

Derivation regression equations for a subsample of the total study sample are shown in Table 6. These equations were then applied to the remaining subjects. These results are shown in the same table (Table 6) in the form of the standard deviation of the residuals for the original equations applied to the other half (odd ID numbers) of the data. Generally these SD's were similar or smaller than the original SD's. Then all the subjects were combined and the final regression equations for each condition are shown in Table 7.

Finally, an attempt was made to predict only the first work cycle time (i.e. the duration to the first limit to work regardless of whether work was limited by fatigue, temperature or heart rate) and these results appear in Table 8. The final table, Table 9 shows the application of the original (Bishop et al., 1992) equations to the new data.

DISCUSSION

The purpose of this study was to determine whether individual worker's tolerance of work in moderate to warm environments in PC could be predicted from a short work trial in a moderate environment as we had observed in a preliminary study (Bishop et al., 1994). This was done by first testing all subjects with a simple field test consisting of bench stepping in PC at room temperature (WBGT=18 °C). These data were then used to predict work tolerance (defined as total minutes of work) for

workers performing at two different work rates and two different environments.

The subjects were generally representative of PC workers in the work force who tend to be younger and fitter than average workers (personal communication with a number of supervisors of PC work). Table 2 shows the results of the two bench step trials. Generally the means are very similar between trials, however the test-retest correlations were very disappointing. In contrast the C.V.'s were small suggesting that though differences were common the overall effects of these differences were small. The lower-than-expected correlations may be due to the way test subjects respond to laboratory tests. Some subjects are challenged in this environment and tend to exert greater effort on repeated tests. Other subjects react in the opposite fashion, realizing that their paycheck is very little influenced by the duration of testing and reacting negatively to the discomfort of physical exertion experienced on the initial test, these subjects may tend to perform much worse on the second trial. Based on these suppositions, we feel it would generally be wiser to perform only a single test assuming that the naivete of the subjects might actually result in more accurate physical data.

Table 4. shows the major responses for each work rate and environments. As would be expected, work tolerance time was less at the hotter environment. Surprisingly, work time was less at the 1.3 L/min work rate (30 min work followed by 30 min rest, yield time weighted metabolic average of 0.75 L/min, i.e a lower

net work rate than the other one) than at the 1.0 L/min work rate, but the increase in Tre was less in the 1.3 L/min condition. The difference between the TWT (total work time) for the two work rates was 31% for the 18 °C environment, and 22% for the 26 °C environment. Within environments, the 1.3 L/min work rate was constrained to only 30 min by design. The first cycle work time at 1.0 L/min in 18 °C was twice as long (62 min), and at 26 °C it was 30% longer. Despite the longer duration at 1.0 L/min workrate, the sweat rates were very similar within environments, and between workrates, and the HR's were remarkably similar within environments despite the differences in time.

The correlations between total work time (TWT) and the bench step variables were not strong. The correlations between the bench step data and each of the work bouts at different work rates and environments were not consistent suggesting that the bench stepping was not generally related to the subsequent work responses as was originally hypothesized. In some cases sweat produced correlated well, and in others, immediate HR correlated well. However, the generally low correlations were surprising in that it would be reasonable to expect that since the physical stressors were similar (e.g. the metabolic rate, the elevated rectal and skin temperatures, etc.) the responses would tend to be similar. These low correlations suggest that there is some degree of intra-individual variability in strain responses to small changes in the physical stressors. Likewise these low correlations may be due to homogeneity in this large sample of

relatively fit, healthy, and young cohort. Unfortunately, as was previously mentioned, relative homogeneity would also be expected in the working population.

The first attempt to derive prediction equations using half the total sample is seen in Table 6. Although none of the predictions were very accurate, the predictions for work at WBGT=18 °C, 1.3 L/min (avg 230 W work rate) were easily the least accurate. This situation may have occurred because in these conditions many of the subjects were able to reach the 8-hour limit thus imposing a ceiling effect. The coefficients of variation which are probably the single best indicators of accuracy were not so high as to be unusable. The coefficient of variation is derived from the product of the standard error of prediction (i.e. the standard deviation of the residuals) and reflects the practical accuracy of the model. For example in the case of the 18/1.0 condition, the predictive error (Syx) was 55 minutes over an average work time of 242 mins. Which is to say about two thirds of the workers tolerance times could be predicted plus or minus 55 minutes, which at minimum permits some categorization of workers into high-tolerant and low-tolerant groups. Although such categorization may carry philosophical problems from the standpoint of organized labor interests, the ability to classify workers in this way may improve safety and productivity considerably. The stability of these equations is evidenced in this table by the similarity of the Syx for the data for the odd numbered subjects predicted using the even-subject

equations. Therefore, these equations may be considered stable and unlikely to change substantially with the addition of more data from the same population to the data base.

Table 7 reflects the results of pooling all the data. The Rsquares were only slightly altered relative to those in Table 6, except for the 26/1.0 condition. Again the C.V.'s were tolerable with the 26/1.0 condition having the worst C.V. of 36%.

Since the prediction equations were not as accurate as expected, additional analysis was performed on the first cycle work time of the subjects (TaBLE 8). The first cycle work (or walk) time is the time from the start of work until the subject reached one of the limits such as Tre of 38.0 °C, fatigue, etc. This was done since the total ostensibly eight-hour work bout might eventually be influenced by ceiling effects or other factors not easily accounted for by our measures. Although all the predictions were better, they were not substantially and uniformly better. Only the 18/1.3 condition improved substantially confirming our suspicions that ceiling effects may have hurt the prediction in this condition.

Table 9 is an evaluation of the originally derived equations (Bishop et al., 1994) applied to the current data. Although we would not expect this original equation to predict nearly as well as the derived equations, only 7-18% of the variance in TWT could be predicted by the original equations. This suggests that the original prediction was not effective and that development of generalized prediction models broadly applicable to different

work rates, clothing types and environments is probably not feasible at this time.

CONCLUSIONS

In summary, it does not appear that our bench step field test of work tolerance in PC permits highly accurate predictions of performance. However, this approach should be broadly useful in determining which workers are most at risk for heat stress in PC. Despite objections to screening workers for particular jobs, it would be reasonable from both the safety and productivity perspectives to attempt to classify workers as tolerant to PC use in heat or intolerant to this work. Such classifications might be very useful in safely increasing productivity.

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Table 1. Mean and standard deviation for subject characteristics (n=50).

VO2max (L/min)	3.77	0.71
VO2(ml/kg)	48.4	8.5
HRmax (beats/min)	190.9	7.7
HT (cm)	179.4	6.0
WT (kg)	78.5	12.9
AGE (yrs)	24.2	3.9

Table 2. Means and standard deviations (S.D.) for key performance variables for bench stepping.

Variable	N	Mean	S.D.
Trial 1			
Bench Step time (min)	46	16.4	7.6
Bench Step heat storage (Whr)			
Bench Step VO2 (ml/kg)	46	32.3	3.9
Bench Step percent VO2max (%)			
Bench Step initial rectal temp. (°C)	46	37.5	0.4
Bench Step final rectal temp. (°C)	46	38.5	0.5
Bench Step change in rectal temp. (°C)	46	0.98	0.48
Bench Step initial mean skin temp. (°C)	46	34.4	0.8
Bench Step final mean skin temp. (°C)	46	36.9	1.0
Bench Step change in mean skin temp. (°C)	46	2.5	0.87
Bench Step immediate recovery HR	45	178.5	13.6
Bench Step 2 min recovery HR	46	138.8	15.8
Bench Step 5 min recovery HR	45	131.2	15.7
Bench Step 5 min comfort rating	43	6.8	0.8
Total Bench Step sweat produced (g/min)	46	37.6	16.5
Total Bench Step sweat lost (g/min)	46	6.2	6.1
Trial 2			
Bench Step time (min)	48	16.2	6.3
Bench Step heat storage (Whr)			
Bench Step VO2 (ml/kg)	48	31.3	4.1
Bench Step percent VO2max (%)			
Bench Step initial rectal temp. (°C)	48	37.4	0.4
Bench Step final rectal temp. (°C)	48	38.3	0.5
Bench Step initial mean skin temp. (°C)	48	34.3	0.8
Bench Step final mean skin temp. (°C)	47	36.6	1.5
Bench Step immediate recovery HR	48	175.8	14.5
Bench Step 2 min recovery HR	48	136.8	14.5
Bench Step 5 min recovery HR	46	128.3	13.7
Bench Step 5 min comfort rating	47	6.7	0.8
Total Bench Step sweat produced (g/min)	48	37.6	18.2
Total Bench Step sweat lost (g/min)	48	9.2	10.3

Table 3. The Rsquares and coefficients of variation for the Test-retest for the two Bench step tests for selected key variables.

Variable	R^2	CV
H5	45	8.6
HR2	36	8.4
HR0	44	5.0
VO2	44	14.7
RPE	41	6.5
Time	84	8.0

Table 4. Means and standard deviations (S.D.) for key performance variables for each environmental/work condition.

Variable	Mean	S.D.
WBGT=18 °C, Work rate = 1.0 L/min		
Total work time (min)	242	56
Total rest time (min)	168	54
Work Cycle 1 time (min)	62.1	25.8
Work Cycle 1 delta Tre (°C)	0.83	0.37
Work Cycle 1 delta mTsk (°C)	2.2	0.74
Work Cycle 1 delta Hr (bts/min)	43	17
Total Sweat produced (g/min)	6.2	3.4
Total Sweat lost (g/min)	3.6	3.0
WBGT=18 °C, Work rate = 1.3 L/min		
Total work time (min)	184	46
Total rest time (min)	219	33
Work Cycle 1 time (min)	28.6	4.1
Work Cycle 1 delta Tre (°C)	0.53	0.24
Work Cycle 1 delta mTsk (°C)	2.1	0.81
Work Cycle 1 delta Hr (bts/min)	43	14
Total Sweat produced (g/min)	6.0	2.4
Total Sweat lost (g/min)	3.5	1.9
WBGT=26 °C, Work rate = 1.0 L/min		
Total work time (min)	123	48
Total rest time (min)	239	57
Work Cycle 1 time (min)	41.3	11.7
Work Cycle 1 delta Tre (°C)	1.12	0.56
Work Cycle 1 delta mTsk (°C)	2.8	0.87
Work Cycle 1 delta Hr (bts/min)	61	24
Total Sweat produced (g/min)	8.1	3.8
Total Sweat lost (g/min)	4.9	2.8
WBGT=26 °C, Work rate = 1.3 L/min		
Total work time (min)	101	38
Total rest time (min)	261	60
Work Cycle 1 time (min)	28.9	3.5
Work Cycle 1 delta Tre (°C)	0.78	0.31
Work Cycle 1 delta mTsk (°C)	2.6	0.64
Work Cycle 1 delta Hr (bts/min)	60	17
Total Sweat produced (g/min)	7.7	3.7
Total Sweat lost (g/min)	4.9	2.7

Note that for the 1.3 L/min work rates for both environments, first cycle time was limted to 30 min.

Table 5. Correlations between key predictor variables and total work time (TOTAL) by environment/condition.

Variable	Pearson r
Bench Step 1 Correlations	
Bench 1 variables correlated with TWT, WBGT=18 °C/ Work rate= 1.0 L/min	
Bench Step time (min)	.22
Bench Step thermal comfort	.13
Total Bench Step sweat lost (g/min)	.26
Total Bench Step sweat produced (g/min)	.30*
Bench Step RPE	-.07
Bench Step VO_2 (L/min)	.14
Bench Step VO_2 (ml/kg)	.07
Bench Step immediate HR	-.27*
Bench Step 2 min recovery HR	-.15
Bench Step 5 min recovery HR	-.04
Bench Step rectal temp. (°C)	.29*
Bench Step mean skin temp. (°C)	.26*
Bench 1 variables correlated with TWT, WBGT=18 °C/ Work rate= 1.3 L/min	
Bench Step time (min)	.07
Bench Step thermal comfort	.01
Total Bench Step sweat lost (g/min)	.17
Total Bench Step sweat produced (g/min)	-.02
Bench Step RPE	.03
Bench Step VO_2 (L/min)	.15
Bench Step VO_2 (ml/kg)	-.21
Bench Step immediate HR	-.22
Bench Step 2 min recovery HR	-.23
Bench Step 5 min recovery HR	-.19
Bench Step rectal temp. (°C)	.25*
Bench Step mean skin temp. (°C)	.03
Bench 1 variables correlated with TWT, WBGT=26 °C/ Work rate= 1.0 L/min	
Bench Step time (min)	.05
Bench Step thermal comfort	-.19
Total Bench Step sweat lost (g/min)	-.04
Total Bench Step sweat produced (g/min)	.34*
Bench Step RPE	-.26*
Bench Step VO_2 (L/min)	.12
Bench Step VO_2 (ml/kg)	.20
Bench Step immediate HR	-.22

Bench Step 2 min recovery HR	.05
Bench Step 5 min recovery HR	-.01
Bench Step rectal temp. (°C)	.16
Bench Step mean skin temp. (°C)	-.02

Bench 1 variables correlated with TWT,WBGT=26 °C/ Work rate= 1.3 L/min

Bench Step time (min)	.18
Bench Step thermal comfort	-.15
Total Bench Step sweat lost (g/min)	.23
Total Bench Step sweat produced (g/min)	.30*
Bench Step RPE	-.04
Bench Step VO_2 (L/min)	-.01
Bench Step VO_2 (ml/kg)	.09
Bench Step immediate HR	-.29*
Bench Step 2 min recovery HR	-.14
Bench Step 5 min recovery HR	-.09
Bench Step rectal temp. (°C)	.13
Bench Step mean skin temp. (°C)	.06

Bench Step 2 Correlations

Bench 2 variables correlated with TWT, WBGT=18 °C/ Work rate= 1.0 L/min

Bench Step time (min)	.21
Bench Step thermal comfort	.19
Total Bench Step sweat lost (g/min)	.01
Total Bench Step sweat produced (g/min)	.37*
Bench Step RPE	.06
Bench Step VO_2 (L/min)	.12
Bench Step VO_2 (ml/kg)	-.03
Bench Step immediate HR	-.29*
Bench Step 2 min recovery HR	-.25*
Bench Step 5 min recovery HR	.08
Bench Step rectal temp. (°C)	.17
Bench Step mean skin temp. (°C)	.21

Bench 2 variables correlated with TWT, WBGT=18 °C/ Work rate= 1.3 L/min

Bench Step time (min)	.06
Bench Step thermal comfort	.10
Total Bench Step sweat lost (g/min)	.07
Total Bench Step sweat produced (g/min)	.08
Bench Step RPE	.22
Bench Step VO_2 (L/min)	.15
Bench Step VO_2 (ml/kg)	-.23

Bench Step immediate HR	-.32*
Bench Step 2 min recovery HR	-.22
Bench Step 5 min recovery HR	-.01
Bench Step rectal temp. (°C)	.24*
Bench Step mean skin temp. (°C)	.05

Bench 2 variables correlated with TWT, WBGT=26 °C/ Work rate= 1.0 L/min

Bench Step time (min)	.13
Bench Step thermal comfort	-.13
Total Bench Step sweat lost (g/min)	-.01
Total Bench Step sweat produced (g/min)	.16
Bench Step RPE	-.13
Bench Step VO_2 (L/min)	.10
Bench Step VO_2 (ml/kg)	.25
Bench Step immediate HR	-.43*
Bench Step 2 min recovery HR	-.37*
Bench Step 5 min recovery HR	-.35
Bench Step rectal temp. (°C)	.18
Bench Step mean skin temp. (°C)	-.11

Bench 2 variables correlated with TWT, WBGT=26 °C/ Work rate= 1.3 L/min

Bench Step time (min)	.26*
Bench Step thermal comfort	.01
Total Bench Step sweat lost (g/min)	-.03
Total Bench Step sweat produced (g/min)	.17
Bench Step RPE	-.04
Bench Step VO_2 (L/min)	-.12
Bench Step VO_2 (ml/kg)	-.05
Bench Step immediate HR	-.44*
Bench Step 2 min recovery HR	-.28*
Bench Step 5 min recovery HR	-.14
Bench Step rectal temp. (°C)	.29*
Bench Step mean skin temp. (°C)	.12

*p<.10 r was significantly different from 0.

Table 6. Regression equations for best prediction of total work time for each work rest condition based upon a sub sample of approx. one-half the total sample (i.e. all even number ID's). Shown also are the SD's for residuals for the derived equation applied to the remaining (i.e. odd ID number data).

Model Variable	Beta Weight	R^2(ADJ.)	Syx (min)	C.V. (%)
WBGT=18 °C/ Work rate= 1.0 L/min				
Intercept	-19			
Bench 1 time	6.1			
Bench 1 Comf rating	15.4			
Bench 1 RPE	-11.7			
Bench 1 HR2	-0.9			
Bench 1 HR5	-0.4			
WT	2.4	.39(.14)	55	22
Applied to odd ID number data			53	
WBGT=18 °C/ Work rate= 1.3 L/min				
Intercept	302			
Bench 1 time	0.8			
Bench 1 RPE	-0.3			
Bench 1 HR2	-0.5			
Wt	-0.1			
WT	-2.1	.08(-.19)	51	27
Applied to odd ID number data			42	
WBGT=26 oC/ Work rate= 1.0 L/min				
Intercept	174			
Bench 1 time	-1.7			
Bench 1 Comf rating	-8.8			
Bench 1 HR0	-2.2			
Bench 1 HR2	-1.0			
HT	2.4			
AGE				
	-2.29	.42(.21)	43	33
Applied to odd ID number data			44	
WBGT=26 °C/ Work rate= 1.3 L/min				
Intercept	-295			
Bench 1 time	3.4			
Bench 1 Comf.	-16.2			
Bench 1 HR0	-0.7			
HT	1.9	.31(.15)	36	35

Applied to odd ID number data 37

Prob is the p value of a T test of the hypothesis that variable beta weight=0. ADJ. is the R^2 adjusted for variable number and sample size (Freund et al., 1986).

Table 7. Regression equations for best prediction of total work time for each work rest condition for all subjects combined.

Variable	Beta Weight	R^2(ADJ.)	Syx (min)	C.V. (%)
WBGT=18 °C/ Work rate= 1.0 L/min				
Intercept	179			
Bench 1 time	2.7			
Bench 1 Comf rating	16.6			
Bench 1 RPE	-8.4			
Bench 1 HR2	-1.8			
Bench 1 HR5	1.4			
WT	1.5	.26(.13)	51	21
WBGT=18 °C/ Work rate= 1.3 L/min				
Intercept	312			
Bench 1 time	0.8			
Bench 1 RPE	1.0			
Bench 1 HR2	-0.9			
HT	0.4			
WT	-2.9	.13(.02)	43	23
WBGT=26 °C/ Work rate= 1.0 L/min				
Intercept	87			
Bench 1 time	2.1			
Bench 1 Comf rating	12.5			
Bench 1 HR0	-0.2			
HT	0.6	.18(.09)	37	36
WBGT=26 °C/ Work rate= 1.3 L/min				
Intercept	331			
Bench 1 time	0.35			
Bench 1 RPE	-9.1			
Bench 1 HR0	-1.7			
Bench 1 HR2	1.0			
Ht	1.1			
Age	-3.8	.29(.18)	43	35

Prob is the p value of a T test of the hypothesis that variable beta weight=0. ADJ. is the R^2 adjusted for variable number and sample size (Freund et al., 1986).

Table 8. Regression equations for prediction of first work cycle time for each work rest condition.

Model Variable	Beta Weight	Prob	R^2
Fill in with max. Rsquare eqn. for predicting each TWT for each condition:			
WBGT=18 °C/ Work rate= 1.0 L/min			
Intercept	34.8		
Bench 1 time	1.2		
Bench 1 Comft rating	9.7		
Bench 1 RPE	-5.0		
Bench 1 HR2	-0.2		
WT	0.7	.01	.35
WBGT=18 °C/ Work rate= 1.3 L/min			
Intercept	1.7		
Bench 1 Comft rating	1.3		
Bench 1 HR0	-0.2		
Bench 1 HR2	-0.1		
HT	0.2		
age	-.2	.02	.30
WBGT=26 °C/ Work rate= 1.0 L/min			
Intercept	-34.6		
Bench 1 Time	0.4		
Bench 1 Comf rating	2.7		
Bench 1 HR0	-0.3		
Bench 1 HR5	-0.2		
WT	0.3		
HT	0.3	.02	.34
WBGT=26 °C/ Work rate= 1.3 L/min			
Intercept	-12.9		
Bench 1 Time	0.3		
Bench 1 Com rating	-0.9		
Bench 1 HR0	0.1		
Bench 1 HR5	-0.04		
WT	0.1		
AGE	0.1	.03	.18

Prob is the p value of a T test of the hypothesis that variable beta weight=0.

Table 9. Comparisons of the original model (Bishop et al. , 1994) with the current data.

Condition

18/1.0 R^2=.18, adj. R^2=.12 using original regression
R^2=.20, adj. R^2=.15 using original variables with new betas in new regression (Betas now intercept=-148, 3.3,1.0,1.9)

Regression lines significantly different (p<.01). Bench time significantly different, comfort and height not different (p>.05).

Change these as needed

18/1.3 R^2=.16, adj. R^2=.09 using original regression
R^2=.20, adj. R^2=.16 using original variables with new betas in new regression (Betas now intercept=-148, 3.4,1.0,1.9)

Regression lines significantly different (p<.01). Bench time significantly different, comfort and height not different (p>.05).

26/1.0 R^2=.07, adj. R^2=.003 using original regression
R^2=.20, adj. R^2=.15 using original variables with new betas in new regression (Betas now intercept=-148, 3.3,1.0,1.9)

Regression lines significantly different (p<.01). All variables individually significantly different except height.

26/1.3?? R^2=.10, adj. R^2=.03 using original regression
R^2=.20, adj. R^2=.15 using original variables with new betas in new regression (Betas now intercept=-148, 3.3,1.0,1.9)

Regression lines significantly different (p<.05). All variables individually significantly different except height.

APPENDIX A

Raw data for all subjects, all runs. Shown are the meanings of all data labels.

Del MSK is the change in mTsk derived by subtracting the initial from the final mTsk.

Del Tre is the change in Tre derived by subtracting the initial from the final Tre.

reas is the reason for stopping a session, coded as Temp =1, HR=2, Fatigue=3 combinations = 12, 13

(ID- is the subjects unique identification number

Bout is the bout using the following codes:
1= 18/1.0
2= 18/1.3
3= 26/1.0
4= 26/1.3

WT is body weight in KG
HT is height in cm
AGE is reported age in years

Bench Step 1 results:
BST1 is Bench Step 1 Time in min
BS1CR is End Comfort Rating (units)
BS1SL is Sweat loss in g/min
BS1SP is sweat produced in g/min
BS1RPE is RPE
BS1VO2 is the measured VO_2 in L/min
BS1ml is VO_2 in ml/kg
BS1HR0 is immediate HR in bpm after termination of Bench stepping
BS1HR2 is the same at two min
BS1HR5 is at 5 min post exercise
BS1Rea is reason for ending Temp =1, HR=2, Fatigue=3 combinations = 12,13
BS1ITre is initial Tre in °C
BS1Tmsk is initial mTsk in °C
BS1ETre is final Tre in °C
BS1ETmsk is final mTsk in °C

Bench Step 2 results are the same as Bench 1 except the number 2 is used, e.g.
(BS2T)Bench Step 1 Time in min

VOM is the VO_2 max Test in L/min and VO_2mlkg is in ml/KG

HRM is the maximal HR in bpm

Walks:
18 (WBGT °C)VO2=1.0, continuous
SL181 is the 18/1.0 Sweat loss in g/min
SP181)is the 18/1.0 Sweat Produced in g/min
Wat 181) is the total Water intake in Liters
TWT181 is the Total Work Time in min
TRST181 is the Total Rest time in min
TT181 is the sum of Total work + rest in min
1CY is Cycle #
1Rea181) is the Reason for stopping the first cycle using the code shown above
1T181 is the first cycle work time in min
1DTRE181 is the first cycle Delta Tre in °C
1DMSK181 is Delta mTsk in °C
1DHR181 is Delta HR in bpm
1RST is Rest #
1RREA181 is Reason for stopping
1RTIM181 is rest Time in min
1RDTR181 is Delta Tre
1RDMS181 is Del Msk
1RDHR181 is Delta HR
etc.

...Prefix changes for subsequent cycles of work or rest, and Suffix changes for subsequent walks such as 183 for 18 °C, 1.3 l/min; 261 for 26 °C, 1.0 L/min and 263 for 26 °C, 1.3 L/min...

PRINTOUT OF BENCH STEP DATA

OBS	ID	WT	HT	AGE	BST1	BS1CR	BS1SL	BS1SP
1	49	81.90	189.20	29	12.0	7.5	0.00	37.5
2	48	68.00	177.80	20	12.0	7.0	2.90	8.8
3	11	85.40	180.30	38	11.0	7.0	0.00	41.0
4	27	81.80	175.30	24	9.0	7.0	0.00	3.9
5	35	67.70	185.50	24	15.0	5.0	7.50	45.3
6	19	62.30	180.30	24	10.0	7.0	25.00	36.0
7	14	82.20	183.00	22	21.0	.	0.00	4.0
8	18	67.50	175.30	33	16.0	8.0	0.00	28.1
9	25	57.50	177.80	22	14.0	7.0	0.00	24.3
10	31	85.60	185.42	24	23.0	7.5	15.70	55.0
11	7	74.70	172.70	21	24.0	7.5	5.00	38.0
12	28	63.90	168.90	24	8.0	7.0	0.00	42.5
13	6	81.00	178.44	22	18.0	7.0	3.30	25.0
14	20	72.40	164.20	22	17.0	7.0	0.00	40.0
15	29	62.70	184.00	25	5.0	5.0	0.00	22.0
16	17	84.66	188.00	22	15.0	7.5	0.00	37.8
17	10	57.70	172.50	30	35.0	7.0	7.00	23.0
18	34	96.80	182.00	22	9.0	6.0	13.30	25.6
19	33	72.60	173.40	27	12.0	7.5	9.20	47.5
20	4	89.00	181.60	24	.	.	.	.
21	2	104.50	182.90	28	26.0	.	4.00	27.0
22	41	70.10	179.10	22	18.0	7.0	6.10	37.8
23	50	85.80	181.00	23	18.0	7.0	6.70	43.9
24	5	71.50	180.30	22	24.0	7.5	5.00	24.0
25	24	78.90	182.90	27	14.0	7.0	2.14	58.6
26	1	82.20	188.00	22	.	.	.	.
27	15	80.80	180.30	31	20.0	7.5	11.50	57.0
28	13	72.70	175.30	21	.	.	.	.
29	37	76.40	178.10	20	14.5	7.5	5.50	31.7
30	21	93.40	190.50	24	13.0	7.0	9.20	43.9
31	3	78.80	177.80	25	.	.	.	.
32	8	68.50	168.90	23	23.0	7.0	5.20	20.0
33	44	87.10	175.30	21	11.0	7.0	10.90	40.9
34	42	62.90	180.40	20	26.0	7.0	8.90	43.9
35	40	68.70	185.40	22	25.0	6.5	4.40	13.6
36	38	57.70	174.00	23	20.0	8.0	18.30	29.2
37	46	114.90	182.00	27	8.0	5.0	13.80	62.5
38	45	68.20	176.50	27	19.0	7.0	5.80	30.0
39	39	75.00	176.50	22	22.0	7.5	10.30	40.9
40	52	79.90	170.20	19	12.0	7.0	20.80	62.5
41	43	92.70	185.40	22	8.0	6.0	0.00	28.8
42	30	72.80	180.30	25	20.0	6.0	0.00	51.0
43	32	106.20	193.00	24	9.0	6.0	0.00	55.6
44	22	98.50	182.90	23	4.0	6.0	12.50	87.5
45	53	97.50	184.00	24	7.0	5.0	0.00	32.8
46	16	86.40	176.50	23	12.0	7.5	9.20	47.5
47	9	77.20	172.70	22	25.0	5.5	8.80	54.4
48	26	80.80	182.90	36	23.0	7.0	5.20	59.1
49	36	69.00	169.50	22	9.0	6.5	11.10	33.3
50	12	70.80	181.60	21	39.0	.	2.80	29.2

OBS	ID	BS1RPE	BS1VO2	BS1ML	BS1HR0	BS1HR2	BS1HR5	BS1REA
1	49	19	2.7	32.9	182	146	142	2
2	48	17	2.3	33.8	188	114	98	2
3	11	17	2.7	31.6	152	118	111	3
4	27	17	2.7	32.4	189	143	138	2
5	35	17	2.3	34.0	161	119	122	3
6	19	18	1.9	31.3	190	122	.	3
7	14	.	2.6	31.0	196	167	155	3
8	18	17	2.0	30.1	185	148	130	3
9	25	16	1.7	29.5	192	153	151	2
10	31	19	2.8	33.2	.	155	156	23
11	7	17	2.6	34.4	178	154	131	1
12	28	17	2.2	35.4	191	125	119	2
13	6	16	2.7	34.3	170	137	131	3
14	20	16	2.3	32.0	174	137	128	13
15	29	14	1.7	26.3	188	147	134	2
16	17	17	3.1	36.5	187	136	129	23
17	10	15	1.6	28.3	141	102	101	1
18	34	15	3.1	32.2	190	140	132	2
19	33	19	2.6	35.6	186	138	129	12
20	4	.	.	.	.	.	.	.
21	2	15	2.5	23.3	181	135	132	12
22	41	17	2.4	34.5	187	152	141	3
23	50	17	2.2	25.6	165	124	114	1
24	5	18	2.1	29.1	188	174	164	3
25	24	17	2.6	32.5	189	164	153	2
26	1	.	.	.	.	.	.	.
27	15	17	2.5	31.5	178	126	124	13
28	13	.	.	.	.	.	.	.
29	37	19	2.6	33.4	174	128	130	13
30	21	16	3.7	39.4	192	150	153	3
31	3	.	.	.	.	.	.	.
32	8	17	2.2	31.7	157	116	113	13
33	44	17	3.0	34.9	161	148	139	1
34	42	16	2.1	33.5	175	130	139	3
35	40	17	2.3	33.9	159	130	130	1
36	38	19	2.2	36.6	175	124	98	3
37	46	15	3.8	33.1	183	129	109	12
38	45	17	2.6	38.7	194	157	153	12
39	39	19	2.8	36.8	171	124	116	3
40	52	18	2.8	34.4	193	161	138	2
41	43	17	3.1	33.4	189	144	129	2
42	30	14	2.5	34.4	158	134	125	1
43	32	17	3.3	30.9	171	128	124	3
44	22	14	3.0	30.5	190	147	129	2
45	53	15	2.6	26.7	180	140	124	3
46	16	17	2.9	33.3	183	158	151	3
47	9	19	2.5	32.3	182	154	150	13
48	26	15	2.8	34.6	155	123	117	1
49	36	16	2.3	33.3	198	153	138	23
50	12	.	1.2	16.9	165	132	135	13

OBS	ID	BS1ITRE	BS1TMSK	BS1ETRE	BS1ETMSK	BS2T	BS2CR	BS2SL
1	49	37.6	34.5	38.4	36.50	13	7.5	8.7
2	48	37.7	34.1	38.4	36.00	10	6.0	22.0
3	11	37.6	35.5	38.3	37.00	13	7.0	6.1
4	27	37.0	34.7	37.8	.	10	6.5	0.0
5	35	37.3	34.0	37.4	37.30	20	5.0	0.0
6	19	37.2	33.3	38.0	35.10	13	7.0	8.0
7	14	38.0	35.5	39.3	38.40	.	.	.
8	18	37.3	34.5	38.6	36.90	14	7.0	0.0
9	25	37.6	35.6	38.7	37.70	14	6.5	16.4
10	31	37.5	35.1	38.5	38.20	20	7.5	57.0
11	7	38.0	35.7	39.2	38.60	24	7.5	9.0
12	28	37.3	32.5	37.9	34.90	7	6.0	15.7
13	6	37.9	35.8	38.8	37.40	17	7.0	13.0
14	20	37.4	35.5	38.5	36.50	17	6.5	13.5
15	29	37.9	34.9	38.2	36.00	7	5.0	0.0
16	17	37.6	34.8	38.5	36.80	19	7.0	0.0
17	10	36.8	33.1	39.0	38.00	.	.	.
18	34	37.9	33.7	38.4	35.80	13	6.0	8.5
19	33	37.7	35.0	38.0	36.60	12	7.5	10.8
20	4	.	.	.	.	16	6.0	13.8
21	2	38.0	33.5	38.9	36.80	27	7.5	0.0
22	41	36.7	33.3	37.9	36.80	21	7.0	0.0
23	50	37.6	34.4	38.8	37.30	17	7.5	0.0
24	5	38.1	35.2	39.1	37.70	23	7.5	4.0
25	24	37.3	34.3	38.2	37.00	14	6.0	16.4
26	1	.	.	.	.	30	8.0	7.7
27	15	37.5	35.5	39.0	37.40	18	7.5	6.1
28	13	.	.	.	.	15	6.5	0.0
29	37	37.7	34.7	39.1	36.90	15	7.5	16.7
30	21	37.8	34.6	38.9	37.50	17	6.5	0.0
31	3	.	.	.	.	24	6.5	9.6
32	8	37.2	35.5	38.1	37.90	21	8.0	0.0
33	44	37.1	34.3	38.4	36.10	9	6.0	12.2
34	42	37.1	33.8	38.8	36.80	28	7.0	3.9
35	40	37.6	34.3	37.7	36.80	20	5.0	1.2
36	38	36.9	34.9	37.9	37.60	12	7.5	9.2
37	46	37.9	34.1	38.3	36.20	9	5.0	13.8
38	45	37.2	34.6	38.2	37.40	16	7.0	6.9
39	39	36.6	33.7	38.9	36.90	20	7.5	11.0
40	52	37.7	34.3	38.6	37.30	15	7.5	1.3
41	43	37.2	33.8	38.0	36.50	7	7.0	28.6
42	30	37.3	35.2	38.8	38.60	20	6.0	5.7
43	32	37.4	34.7	37.9	37.40	7	7.0	14.3
44	22	37.7	33.7	38.2	34.80	5	6.5	28.0
45	53	37.5	33.5	38.1	33.70	7	6.5	14.3
46	16	37.7	33.5	38.2	36.60	14	7.0	0.0
47	9	37.6	34.2	39.0	37.80	25	5.5	18.4
48	26	37.5	34.3	38.8	37.50	19	6.0	6.3
49	36	37.5	34.9	38.2	36.00	12	8.0	0.0
50	12	37.3	33.7	39.0	37.25	30	.	2.8

OBS	ID	BS2SP	BS2RPE	BS2VO2	BS2ML	BS2HR0	BS2HR2	BS2HR5
1	49	15.9	19	2.5	30.5	182	139	136
2	48	34.0	17	2.3	33.8	188	123	112
3	11	44.4	17	1.7	20.2	167	123	123
4	27	34.5	16	3.7	32.8	189	141	140
5	35	40.0	17	2.2	32.0	164	128	120
6	19	17.0	18	2.1	33.9	187	135	131
7	14	.	.	.	.	.	.	.
8	18	24.0	17	1.9	28.2	186	147	140
9	25	24.3	14	1.8	31.7	189	145	139
10	31	63.0	19	2.7	32.4	185	151	150
11	7	38.0	16	2.7	36.1	145	133	120
12	28	48.6	15	2.1	32.5	192	133	120
13	6	41.0	17	2.6	32.8	149	125	115
14	20	27.1	17	2.4	33.6	180	155	146
15	29	14.3	13	2.1	33.8	191	142	125
16	17	36.0	18	2.8	33.7	174	138	129
17	10	.	.	.	.	.	.	.
18	34	34.6	16	3.1	32.2	196	150	145
19	33	46.7	18	2.7	34.9	185	134	121
20	4	42.5	17	2.9	32.6	194	157	142
21	2	50.4	14	2.4	22.6	180	151	148
22	41	27.6	20	2.5	35.4	180	149	115
23	50	47.1	17	2.5	29.1	163	119	114
24	5	19.0	18	2.3	31.4	192	155	133
25	24	32.9	15	2.4	30.0	186	145	141
26	1	34.3	20	2.4	29.5	160	103	114
27	15	63.3	18	2.4	30.2	164	123	120
28	13	7.3	17	2.3	31.0	180	136	100
29	37	32.0	19	2.7	35.5	172	122	121
30	21	33.4	17	3.5	38.2	191	150	150
31	3	37.9	16	2.3	29.5	145	137	132
32	8	26.7	19	2.1	30.3	155	128	115
33	44	63.3	17	3.4	39.0	182	143	137
34	42	24.3	16	2.2	34.2	170	125	140
35	40	18.5	13	2.2	32.0	176	138	136
36	38	28.3	19	1.3	22.9	165	124	115
37	46	101.1	15	2.7	23.4	175	120	100
38	45	21.3	19	1.7	24.5	160	144	138
39	39	51.0	20	2.6	35.0	180	150	124
40	52	31.3	18	2.9	36.0	188	150	138
41	43	42.9	17	2.9	31.3	186	138	135
42	30	34.0	11	2.2	29.7	136	104	99
43	32	57.1	17	3.3	30.9	166	128	120
44	22	74.0	17	2.3	23.4	187	125	114
45	53	42.9	18	3.3	33.8	172	116	.
46	16	12.8	17	3.0	34.0	185	151	148
47	9	40.8	17	2.5	32.3	177	143	136
48	26	77.3	14	2.8	34.6	155	122	.
49	36	28.3	19	2.1	30.4	190	179	142
50	12	18.6	.	1.9	26.8	179	147	125

OBS	ID	BS2REA	BS2ITRE	BS2TMSK	BS2ETRE	BS2ETMSK	VOM	VOMLKG
1	49	2	37.5	33.8	38.3	34.0	3.80	46.6
2	48	2	37.2	33.6	38.1	33.8	.	.
3	11	3	37.8	35.3	38.7	37.5	3.31	39.2
4	27	3	36.9	34.1	37.7	35.3	3.60	44.5
5	35	3	37.5	34.6	38.5	37.2	3.80	54.8
6	19	3	37.3	31.9	38.2	35.6	2.60	41.8
7	14	.	.	.	.	.	4.40	51.7
8	18	.	37.5	34.4	38.2	36.9	3.30	48.8
9	25	2	37.4	34.4	38.4	37.1	2.60	44.0
10	31	3	37.6	34.7	38.6	37.9	4.20	49.8
11	7	1	37.7	35.0	39.4	38.9	4.40	58.6
12	28	2	37.5	34.4	38.1	35.4	2.60	42.2
13	6	3	37.4	34.0	38.2	37.4	4.20	52.4
14	20	13	37.4	35.1	38.9	37.6	3.60	48.5
15	29	2	37.9	34.2	38.0	35.3	2.50	38.9
16	17	3	37.3	34.4	37.9	37.4	3.82	45.0
17	10	.	.	.	.	.	3.40	59.2
18	34	3	36.2	34.4	36.3	36.6	4.10	42.1
19	33	2	37.9	34.7	37.9	35.9	3.60	49.4
20	4	12	37.7	34.8	39.0	36.1	3.60	40.7
21	2	3	37.8	33.9	37.8	38.8	5.00	48.1
22	41	1	36.9	33.0	38.7	36.8	4.00	56.7
23	50	3	37.7	34.5	38.8	37.6	4.40	50.6
24	5	3	37.0	34.7	38.1	37.9	4.20	59.4
25	24	2	37.5	34.5	37.5	37.2	3.50	44.1
26	1	13	36.9	33.6	38.4	36.8	4.60	56.3
27	15	13	37.4	34.9	38.8	.	4.40	54.0
28	13	3	37.6	34.5	38.2	35.1	3.50	48.1
29	37	3	37.8	35.5	38.8	37.7	3.80	50.3
30	21	2	37.4	33.8	37.1	37.9	4.90	52.6
31	3	3	37.6	33.3	38.8	36.1	3.70	47.0
32	8	13	37.8	34.4	38.5	37.1	3.80	56.1
33	44	3	38.0	35.2	38.1	37.4	2.80	31.8
34	42	3	37.3	34.7	38.2	38.3	3.60	56.9
35	40	1	37.2	34.2	38.4	37.1	2.40	34.0
36	38	3	37.3	34.5	38.0	36.9	2.70	47.1
37	46	13	37.7	33.0	38.5	35.6	4.40	38.2
38	45	13	37.3	35.0	38.3	37.2	3.60	52.7
39	39	1	37.1	35.4	38.5	37.5	4.40	58.4
40	52	3	37.4	35.2	38.5	37.1	4.20	52.0
41	43	3	37.4	33.5	37.7	35.0	2.90	31.1
42	30	3	36.3	33.8	37.4	37.0	5.10	70.7
43	32	3	37.5	33.5	37.9	31.7	4.30	40.9
44	22	2	37.3	34.9	37.8	33.7	3.30	33.5
45	53	3	37.0	33.3	37.5	33.2	4.50	45.9
46	16	3	37.7	33.5	38.6	35.6	4.10	47.4
47	9	3	37.2	33.7	38.7	37.6	4.00	52.3
48	26	3	37.4	34.4	38.8	37.4	5.10	69.8
49	36	3	37.6	35.3	38.9	38.4	2.80	41.3
50	12	3	37.8	33.1	38.4	36.6	3.30	47.3

OBS	ID	HRM	RATING1	RATING2	RATING3	RATING4
1	49	190	1	1	3	3
2	48	.	.	.	.	.
3	11	187	3	1	3	9
4	27	199	.	.	.	.
5	35	191	.	.	.	.
6	19	201	2	1	3	6
7	14	203	3	1	1	3
8	18	197	.	.	.	.
9	25	192	.	.	.	.
10	31	176	.	.	.	.
11	7	192	3	1	1	3
12	28	199	2	3	1	6
13	6	193	1	1	3	3
14	20	198	3	1	2	6
15	29	192	3	3	1	9
16	17	187	3	3	1	9
17	10	173	.	.	.	.
18	34	190	3	1	2	6
19	33	201	.	.	.	.
20	4	192	.	.	.	.
21	2	195	.	.	.	.
22	41	192	3	1	1	3
23	50	196	.	.	.	.
24	5	197	3	1	2	6
25	24	198	.	.	.	.
26	1	187	.	.	.	.
27	15	192	2	3	1	6
28	13	195	.	.	.	.
29	37	177	3	1	2	6
30	21	193	1	3	2	6
31	3	200	.	.	.	.
32	8	173	3	1	1	3
33	44	186	.	.	.	.
34	42	191	3	1	3	9
35	40	185	3	1	2	6
36	38	185	2	1	3	6
37	46	187	.	.	.	.
38	45	200	1	1	1	1
39	39	187	3	1	3	9
40	52	183	.	.	.	.
41	43	187	.	.	.	.
42	30	185	.	.	.	.
43	32	179	3	1	3	9
44	22	192	.	.	.	.
45	53	191	.	.	.	.
46	16	204	.	.	.	.
47	9	198	.	.	.	.
48	26	179	2	1	1	2
49	36	201	1	3	2	6
50	12	187	1	3	2	6

OBS	ID	BOUT	SL181	SP181	WAT181	TWT181	TRST181
1	37	1	3.7	7.6	2.9	312	133
2	37	2	3.3	6.2	2.5	232	212
3	37	3	4.1	6.8	2.0	132	277
4	37	4	4.1	7.2	3.3	148	255
5	53	1	2.4	5.2	1.6	210	199
6	53	2	2.4	4.4	2.2	240	210
7	53	3	5.1	9.0	3.1	196	236
8	53	4	3.9	6.3	3.4	173	238
9	27	1	3.0	5.6	2.1	272	162
10	27	2	1.9	3.8	1.3	172	186
11	27	3	7.2	16.4	1.0	71	101
12	27	4	4.5	4.5	1.8	46	194
13	11	1	3.8	5.6	1.1	249	196
14	11	2	3.0	5.0	0.9	148	281
15	11	3	5.9	5.6	0.3	43	204
16	11	4	5.0	6.7	2.2	87	309
17	48	1	2.0	3.4	1.4	205	215
18	48	2	5.2	5.7	1.8	210	213
19	48	3	3.9	6.2	3.3	144	252
20	48	4	4.4	6.1	0.4	21	110
21	49	1	2.2	3.9	1.7	158	230
22	49	2	2.8	4.2	1.1	117	268
23	49	3	2.9	5.3	1.1	64	227
24	49	4	3.1	4.4	0.6	50	206
25	35	1	6.6	11.1	4.5	226	192
26	35	2	6.1	9.6	3.8	180	211
27	35	3	4.5	9.9	3.5	145	230
28	35	4	8.7	12.9	5.8	123	305
29	19	1	1.0	3.0	1.3	252	184
30	19	2	1.3	2.8	1.4	212	210
31	19	3	0.5	2.5	1.1	29	143
32	19	4	1.4	3.0	1.7	81	345
33	14	1	1.8	4.6	1.0	282	156
34	14	2	3.7	6.8	1.0	178	246
35	14	3	6.0	9.8	2.3	89	266
36	14	4	5.3	8.9	2.3	69	216
37	18	1	2.7	4.2	1.7	197	244
38	18	2	5.0	6.7	3.3	210	192
39	18	3	3.9	6.3	2.9	123	315
40	18	4	4.2	6.6	3.9	72	258
41	25	1	2.2	4.1	1.8	189	237
42	25	2	1.9	3.2	1.1	147	253
43	25	3	2.0	4.4	2.3	112	322
44	25	4	2.9	4.2	1.8	91	334
45	31	1	3.2	7.1	2.2	303	94
46	31	2	6.3	10.2	2.4	225	210
47	31	3	6.3	11.0	2.1	122	275
48	31	4	9.6	12.9	3.9	117	325
49	7	1	2.5	4.1	0.3	173	195
50	7	2	3.5	5.1	0.9	151	264
51	7	3	4.5	8.0	1.5	155	240
52	7	4	6.0	7.5	1.2	67	310
53	28	1	1.9	4.2	1.2	132	227
54	28	2	1.2	2.1	0.8	77	273
55	28	3	4.3	6.5	1.3	63	202
56	28	4	1.3	4.2	1.4	64	269

OBS	ID	BOUT	SL181	SP181	WAT181	TWT181	TRST181
57	6	1	2.5	4.2	1.5	162	249
58	6	2	2.1	4.0	1.4	172	245
59	6	3	6.9	9.6	2.7	125	211
60	6	4	4.0	10.0	3.4	81	307
61	20	1	3.3	8.0	3.4	235	169
62	20	2	3.4	7.3	2.8	240	211
63	20	3	3.3	6.6	2.7	93	317
64	20	4	4.2	6.4	1.6	54	247
65	29	1	3.5	4.2	1.7	178	242
66	29	2	1.5	3.2	1.6	150	173
67	29	3	5.8	8.4	2.3	127	260
68	29	4	6.3	10.4	2.2	91	101
69	17	1	2.4	6.3	2.2	293	127
70	17	2	8.9	9.8	4.4	243	208
71	17	3	2.1	4.9	1.6	145	221
72	17	4	1.6	5.5	2.5	117	237
73	10	1	3.1	3.6	1.5	305	124
74	10	2	3.0	4.9	1.9	178	245
75	10	3	3.0	5.6	2.0	99	274
76	10	4	4.7	3.1	1.7	79	335
77	34	1	2.5	4.9	2.3	193	234
78	34	2	3.3	5.7	2.9	227	211
79	34	3	1.9	5.1	1.7	101	225
80	34	4	3.1	5.9	3.8	122	280
81	33	1	4.4	4.7	1.8	276	148
82	33	2	2.1	4.0	0.8	133	282
83	33	3	4.0	6.8	1.5	129	246
84	33	4	3.9	6.1	2.8	109	302
85	4	1	1.5	2.1	0.8	149	260
86	4	2	3.2	3.6	0.5	75	153
87	4	3	4.2	4.9	1.1	28	177
88	4	4	3.8	7.3	1.7	84	362
89	2	1	5.3	13.2	2.9	264	67
90	2	2	3.8	6.1	1.7	90	243
91	2	3	4.7	14.6	1.5	37	136
92	2	4	1.2	8.7	1.3	73	316
93	41	1	9.8	11.6	3.3	273	113
94	41	2	3.5	6.9	1.9	208	226
95	41	3	4.2	7.6	2.4	144	286
96	41	4	3.3	6.9	1.5	97	314
97	50	1	3.6	7.2	2.3	324	116
98	50	2	3.5	7.0	2.2	210	203
99	50	3	2.5	5.1	1.6	139	298
100	50	4	3.2	6.6	3.2	98	307
101	5	1	2.0	4.2	2.1	205	222
102	5	2	2.7	4.8	2.1	135	243
103	5	3	5.0	7.5	2.8	132	233
104	5	4	7.3	5.3	2.4	119	316
105	24	1	3.7	6.1	2.3	223	204
106	24	2	4.5	7.8	1.2	90	183
107	24	3	4.2	8.4	2.8	134	319
108	24	4	4.2	9.3	2.4	78	279
109	1	1	3.3	9.3	2.1	275	43
110	1	2	2.9	4.3	1.0	180	235
111	1	3	5.0	10.2	1.9	159	257
112	1	4	4.9	7.8	2.3	101	289

OBS	ID	BOUT	SL181	SP181	WAT181	TWT181	TRST181
113	15	1	4.7	9.0	3.1	285	90
114	15	2	3.8	8.0	3.2	240	210
115	15	3	9.8	15.1	4.3	126	244
116	15	4	9.3	16.0	5.6	130	242
117	13	1	0.3	2.2	1.3	104	254
118	13	2	2.7	5.7	2.7	126	291
119	13	3	1.1	8.0	2.3	176	234
120	13	4	1.4	2.4	1.5	49	294
121	21	1	13.4	6.9	1.7	211	204
122	21	2	3.1	6.0	1.5	180	199
123	21	3	3.1	5.7	1.4	81	294
124	21	4	3.9	6.1	1.1	30	123
125	3	1	1.6	4.2	1.5	259	176
126	3	2	2.1	4.1	1.2	233	218
127	3	3	4.8	6.9	2.2	167	203
128	3	4	5.5	8.8	3.0	163	242
129	8	1	3.8	4.8	1.6	221	202
130	8	2	2.0	5.1	2.7	210	203
131	8	3	3.5	5.2	3.5	93	307
132	8	4	6.7	8.3	2.8	111	294
133	44	1	0.3	4.0	0.1	277	149
134	44	2	2.6	3.7	1.3	210	180
135	44	3	6.7	7.0	3.3	189	205
136	44	4	2.9	7.6	1.3	65	294
137	42	1	4.3	7.9	3.8	357	78
138	42	2	3.5	6.9	3.3	210	181
139	42	3	7.4	10.6	7.2	224	211
140	42	4	5.6	8.5	5.0	174	225
141	40	1	2.1	3.8	0.5	233	181
142	40	2	2.8	4.3	1.0	225	217
143	40	3	3.0	3.8	1.5	145	278
144	40	4	4.3	3.2	1.5	140	266
145	38	1	4.2	8.6	0.7	218	113
146	38	2	4.9	7.7	2.2	186	249
147	38	3	3.5	7.8	1.5	73	255
148	38	4	4.8	9.2	1.9	136	224
149	46	1	5.7	10.3	3.4	261	181
150	46	2	8.3	10.3	4.2	153	244
151	46	3	8.4	10.5	4.1	118	269
152	46	4	6.9	13.4	3.7	118	229
153	45	1	3.6	8.2	3.2	307	135
154	45	2	3.3	7.4	2.2	226	210
155	45	3	4.3	6.3	3.1	142	253
156	45	4	3.6	8.1	2.6	117	297
157	39	1	1.7	4.5	3.9	227	216
158	39	2	5.6	9.4	3.2	240	200
159	39	3	7.0	9.7	6.0	169	259
160	39	4	4.1	7.5	6.1	171	264
161	52	1	3.5	5.5	1.7	274	96
162	52	2	3.5	6.6	1.5	210	187
163	52	3	4.1	7.7	2.0	118	319
164	52	4	3.5	7.9	1.8	105	288
165	43	1	2.5	4.9	1.3	197	174
166	43	2	2.9	4.4	1.0	237	150
167	43	3	3.5	6.2	1.9	46	120
168	43	4	4.5	5.4	1.8	46	186

OBS	ID	BOUT	SL181	SP181	WAT181	TWT181	TRST181
169	30	1	3.4	9.5	2.0	272	147
170	30	2	4.3	7.7	2.0	210	180
171	30	3	11.0	14.9	4.6	224	178
172	30	4	6.8	11.6	2.9	175	251
173	32	1	1.6	6.0	0.8	264	177
174	32	2	1.5	5.3	1.5	210	180
175	32	3	4.5	8.8	3.4	164	232
176	32	4	8.5	13.7	3.4	101	270
177	22	1	2.7	5.4	1.3	286	136
178	22	2	2.5	3.3	0.5	166	256
179	22	3	4.0	5.7	2.5	179	221
180	22	4	4.0	6.7	2.7	107	231
181	36	1	1.9	5.2	1.8	242	163
182	36	2	3.1	4.6	1.8	155	255
183	36	3	4.1	6.5	2.5	121	298
184	36	4	6.0	10.4	2.7	103	235
185	12	1	4.1	5.0	1.1	214	184
186	12	2	0.8	4.1	0.6	167	183
187	12	3	3.9	9.7	0.4	74	83
188	12	4	3.6	5.8	0.4	79	126
189	16	1	6.3	1.6	1.9	262	156
190	16	2	2.1	4.3	1.4	167	236
191	16	3	6.5	3.3	2.8	113	217
192	16	4	6.6	3.3	3.3	126	253
193	9	1	1.9	5.3	1.7	213	155
194	9	2	3.8	9.8	2.6	167	234
195	9	3	4.6	6.7	2.2	116	329
196	9	4	4.8	5.3	2.5	111	331
197	26	1	17.3	22.6	6.0	385	65
198	26	2	10.1	14.3	3.6	240	210
199	26	3	18.5	24.7	7.6	203	207
200	26	4	17.3	23.4	6.2	160	215

PRINTOUT OF WALK CYCLE DATA

OBS	ID	BOUT	CYCLE	REAS	TIME	DEL_TRE	DEL_MSK	DEL_HR
1	49	A	1	1	35	0.4	3.2	45
2	49	A	1	.	55	-0.2	0.1	16
3	49	A	2	1	35	0.4	2.4	46
4	49	A	2	.	55	-0.2	-0.1	.
5	49	A	3	1	51	0.4	2.6	61
6	49	A	3	.	120	-0.1	0.1	6
7	49	A	4	1	37	0.4	2.4	62
8	49	B	1	12	30	0.7	2.1	59
9	49	B	1	.	72	0.0	-0.8	-12
10	49	B	2	12	30	0.5	1.5	64
11	49	B	2	.	54	-0.1	1.2	-6
12	49	B	3	1	19	0.5	1.3	44
13	49	B	3	.	43	-0.1	-0.9	-1
14	49	B	4	1	21	0.5	1.6	40
15	49	B	4	.	99	-0.1	-1.2	-4
16	49	B	5	1	17	0.6	1.3	59
17	49	C	1	1	39	0.6	2.7	53
18	49	C	1	.	117	0.0	0.5	-7
19	49	C	2	1	25	0.5	2.6	44
20	49	D	1	1	22	0.4	2.3	36
21	49	D	1	.	119	0.0	1.0	-4
22	49	D	2	1	28	0.7	3.0	76
23	48	A	1	1	40	0.8	1.7	44
24	48	A	1	.	30	0.0	-0.1	-7
25	48	A	2	1	31	1.0	1.6	50
26	48	A	2	.	30	0.1	0.0	0
27	48	A	3	1	29	1.0	1.3	61
28	48	A	3	.	30	0.1	-1.8	-3
29	48	A	4	1	17	0.9	1.0	45
30	48	A	4	.	33	0.3	-0.6	0
31	48	A	5	1	25	0.9	1.5	47
32	48	A	5	.	30	0.1	0.1	-1
33	48	A	6	1	31	1.0	2.1	69
34	48	A	6	.	35	0.4	0.3	-3
35	48	A	7	1	17	0.9	1.8	42
36	48	A	7	.	27	0.4	0.7	-2
37	48	A	8	2	15	0.7	2.0	50
38	48	B	1	1	30	0.7	2.6	30
39	48	B	1	.	30	0.5	0.9	1
40	48	B	2	12	30	1.2	2.8	79
41	48	B	2	.	63	0.6	1.0	5
42	48	B	3	1	30	1.0	3.0	59
43	48	B	3	.	30	0.4	0.5	10
44	48	B	4	1	30	0.9	2.6	76
45	48	B	4	.	30	0.3	0.5	6
46	48	B	5	1	30	0.9	2.6	73
47	48	B	5	.	30	0.0	0.8	6
48	48	B	6	1	30	0.7	1.5	76
49	48	B	6	.	30	-0.4	0.8	6
50	48	B	7	1	30	0.3	2.4	73
51	48	C	1	1	32	1.0	1.7	70
52	48	C	1	.	42	0.4	0.4	4
53	48	C	2	23	35	1.4	2.5	90
54	48	C	2	.	45	0.4	-0.2	1
55	48	C	3	1	20	1.2	1.4	101
56	48	C	3	.	42	-2.5	-0.3	11

OBS	ID	BOUT	CYCLE	REAS	TIME	DEL_TRE	DEL_MSK	DEL_HR
57	48	C	4	1	28	1.50	1.5	93
58	48	C	4	.	67	0.40	-0.5	11
59	48	C	5	1	17	1.20	1.2	11
60	48	C	5	.	56	0.50	0.0	15
61	48	C	6	1	12	1.10	1.5	69
62	48	D	1	1	21	0.60	2.1	54
63	11	A	1	1	75	1.00	2.4	44
64	11	A	1	.	32	0.40	-0.5	8
65	11	A	2	1	55	1.00	2.5	57
66	11	A	2	.	49	0.40	-1.1	10
67	11	A	3	1	39	1.00	2.3	48
68	11	A	3	.	42	0.40	-0.6	14
69	11	A	4	1	50	0.90	1.0	63
70	11	A	4	.	73	0.40	1.5	2
71	11	A	5	2	30	0.70	-1.1	.
72	11	B	1	1	30	0.80	3.1	36
73	11	B	1	.	30	0.60	1.9	10
74	11	B	2	12	30	1.20	3.8	56
75	11	B	2	.	62	0.60	0.4	3
76	11	B	3	1	28	1.50	3.7	72
77	11	B	3	.	75	0.60	0.1	6
78	11	B	4	12	30	1.30	3.8	78
79	11	B	4	.	87	0.60	0.5	14
80	11	B	5	12	30	1.80	3.7	76
81	11	C	1	1	43	1.10	3.0	62
82	11	D	1	1	30	1.60	3.6	73
83	11	D	1	.	186	0.30	-0.4	-21
84	11	D	2	1	30	1.50	3.2	64
85	11	D	2	.	94	0.40	-1.0	21
86	11	D	3	1	27	1.60	2.8	76
87	27	A	1	1	53	0.90	2.4	42
88	27	A	1	.	45	0.10	-1.7	11
89	27	A	2	1	48	0.87	2.1	40
90	27	A	2	.	30	0.20	-0.6	10
91	27	A	3	1	56	1.00	2.5	53
92	27	A	3	.	38	0.20	-0.4	12
93	27	A	4	1	40	0.90	2.3	55
94	27	A	4	.	28	0.20	-0.3	16
95	27	A	5	1	35	1.00	2.5	61
96	27	A	5	.	21	0.20	0.9	6
97	27	A	6	12	40	0.70	2.5	54
98	27	B	1	1	30	0.70	0.9	47
99	27	B	1	.	30	0.10	-0.7	6
100	27	B	2	1	30	1.10	2.6	45
101	27	B	2	.	30	0.80	0.3	3
102	27	B	3	1	30	1.20	1.7	63
103	27	B	3	.	30	0.80	0.6	10
104	27	B	4	12	30	1.50	1.9	55
105	27	B	4	.	30	0.90	0.1	15
106	27	B	5	12	30	1.70	0.9	64
107	27	B	5	.	35	0.90	-0.3	6
108	27	B	6	3	22	1.20	1.3	44
109	27	C	1	1	46	1.60	3.3	50
110	27	C	1	.	85	0.80	1.1	19
111	27	C	2	13	25	1.40	3.1	53
112	27	D	1	3	16	0.20	2.0	27

OBS	ID	BOUT	CYCLE	REAS	TIME	DEL_TRE	DEL_MSK	DEL_HR
113	27	D	1	.	63	0.10	0.10	-19
114	27	D	2	12	30	1.00	2.70	68
115	35	A	1	13	56	0.50	1.90	45
116	35	A	1	.	43	-0.30	1.10	-8
117	35	A	2	3	47	0.40	1.70	39
118	35	A	2	.	70	-0.30	-1.50	-19
119	35	A	3	3	36	0.10	1.10	62
120	35	A	3	.	49	-0.20	2.40	-21
121	35	A	4	1	51	0.50	1.60	26
122	35	A	4	.	30	-0.10	-5.40	-12
123	35	A	5	13	36	0.50	0.90	18
124	35	B	1	1	30	0.60	2.50	52
125	35	B	1	.	30	-0.30	-0.40	-14
126	35	B	2	1	30	0.50	2.60	.
127	35	B	2	.	31	-0.30	-0.50	-9
128	35	B	3	1	30	0.60	3.30	58
129	35	B	3	.	30	-0.30	-0.80	-16
130	35	B	4	1	30	0.60	2.20	59
131	35	B	4	.	30	-0.20	-0.80	-12
132	35	B	5	3	13	0.40	1.70	57
133	35	B	5	.	30	-0.30	-1.10	-15
134	35	B	6	12	30	0.70	2.50	67
135	35	B	6	.	30	-0.40	-0.50	-16
136	35	B	7	3	10	-0.10	1.30	54
137	35	B	7	.	30	-0.60	-1.10	-24
138	35	B	8	3	7	-0.14	0.40	48
139	35	C	1	1	37	1.00	3.10	60
140	35	C	1	.	52	0.00	2.40	5
141	35	C	2	1	30	1.00	3.20	70
142	35	C	2	.	57	0.20	-3.60	0
143	35	C	3	1	12	0.80	1.40	50
144	35	C	3	.	32	0.20	1.00	-1
145	35	C	4	1	21	0.90	3.00	62
146	35	C	4	.	43	0.20	1.10	2
147	35	C	5	1	20	0.90	2.80	58
148	35	C	5	.	46	0.20	0.40	6
149	35	C	6	1	25	1.00	2.90	55
150	35	D	1	1	28	0.70	2.30	73
151	35	D	1	.	43	0.00	0.90	1
152	35	D	2	1	14	0.80	1.90	53
153	35	D	2	.	44	0.10	0.20	2
154	35	D	3	1	14	0.70	1.80	48
155	35	D	3	.	41	0.00	0.40	-1
156	35	D	4	1	16	0.60	1.90	47
157	35	D	4	.	60	-0.10	-0.20	-10
158	35	D	5	1	17	0.60	1.70	31
159	35	D	5	.	64	0.00	-0.12	-2
160	35	D	6	1	19	0.60	1.60	64
161	35	D	6	.	53	0.10	-0.10	.
162	35	D	7	1	15	0.70	1.60	55
163	19	A	1	1	44	1.10	4.10	78
164	19	A	1	.	49	0.40	2.40	4
165	19	A	2	1	33	1.10	4.30	74
166	19	A	2	.	19	0.20	2.90	6
167	19	A	3	1	59	1.00	5.50	87
168	19	A	3	.	22	0.30	3.40	3

OBS	ID	BOUT	CYCLE	REAS	TIME	DEL_TRE	DEL_MSK	DEL_HR
169	19	A	4	3	23	0.70	4.6	86
170	19	A	4	.	31	-0.40	2.3	16
171	19	A	5	3	40	0.40	4.9	84
172	19	A	5	.	30	-0.80	2.1	6
173	19	A	6	3	12	-0.50	3.1	61
174	19	A	6	.	33	-1.40	1.8	9
175	19	A	7	3	41	-0.30	4.2	70
176	19	B	1	1	17	0.30	1.1	34
177	19	B	1	.	30	-0.10	-0.4	-9
178	19	B	2	1	30	-0.80	1.6	42
179	19	B	2	.	30	-1.20	-0.2	-2
180	19	B	3	1	30	-0.70	1.2	70
181	19	B	3	.	30	-1.30	-1.0	.
182	19	B	4	1	30	-0.70	0.5	54
183	19	B	4	.	30	-1.30	-1.2	1
184	19	B	5	1	30	-0.80	0.4	60
185	19	B	5	.	30	-1.30	-0.2	-1
186	19	B	6	1	30	-0.80	0.5	69
187	19	B	6	.	30	-1.30	-1.0	7
188	19	B	7	1	30	-0.80	0.6	70
189	19	B	7	.	30	-1.40	-1.5	.
190	19	B	8	1	15	-1.00	-0.3	66
191	19	C	1	1	29	1.20	3.6	83
192	19	D	1	12	30	1.50	3.4	80
193	19	D	1	.	97	0.70	0.9	15
194	19	D	2	1	19	1.40	4.1	79
195	19	D	2	.	116	0.70	2.1	15
196	19	D	3	1	16	1.70	3.8	81
197	19	D	3	.	109	0.80	2.5	15
198	19	D	4	1	16	1.60	3.5	75
199	14	A	1	1	44	0.60	2.8	7
200	14	A	1	.	37	-0.10	0.5	-28
201	14	A	2	1	28	0.50	2.9	12
202	14	A	2	.	31	0.00	0.4	-3
203	14	A	3	1	50	0.50	2.6	10
204	14	A	3	.	32	-0.10	2.5	-33
205	14	A	4	3	75	0.40	3.2	13
206	14	A	4	.	28	-0.10	2.5	-33
207	14	A	5	1	54	1.00	3.1	16
208	14	A	5	.	28	0.00	2.1	-43
209	14	A	6	1	31	0.40	2.6	21
210	14	B	1	2	30	0.30	0.8	35
211	14	B	1	.	30	0.00	-1.0	12
212	14	B	2	12	30	0.70	1.3	41
213	14	B	2	.	90	-0.10	-3.2	-21
214	14	B	3	2	30	0.40	0.8	40
215	14	B	3	.	30	-0.10	-0.9	-4
216	14	B	4	1	28	0.50	0.8	18
217	14	B	4	.	50	-0.14	-2.6	-11
218	14	B	5	2	30	0.20	0.1	34
219	14	B	5	.	30	-0.20	1.8	-17
220	14	B	6	1	30	0.50	0.5	40
221	14	C	1	1	45	0.20	3.4	46
222	14	C	1	1	.	-0.11	1.0	-24
223	14	C	2	1	44	0.90	3.6	48
224	14	D	1	2	30	0.22	3.2	57

OBS	ID	BOUT	CYCLE	REAS	TIME	DEL_TRE	DEL_MSK	DEL_HR
225	14	D	1	.	30	0.21	1.80	1
226	14	D	2	1	18	0.70	3.80	75
227	14	D	2	.	107	0.10	0.90	8
228	14	D	3	1	21	1.10	3.60	45
229	18	A	1	1	60	1.00	2.80	71
230	18	A	1	.	71	0.30	-0.80	6
231	18	A	2	1	36	0.80	2.80	40
232	18	A	2	.	32	0.30	-0.90	40
233	18	A	3	1	27	0.90	1.80	54
234	18	A	3	.	48	0.20	-1.00	-6
235	18	A	4	1	36	1.10	2.74	52
236	18	A	4	.	47	0.30	-0.47	-3
237	18	A	5	1	22	0.90	2.30	48
238	18	A	5	.	46	0.30	0.11	28
239	18	A	6	1	16	0.90	2.70	42
240	18	B	1	2	30	0.20	2.20	41
241	18	B	1	.	31	-0.10	0.20	-6
242	18	B	2	2	30	0.20	2.10	42
243	18	B	2	.	31	0.50	-0.10	-12
244	18	B	3	1	30	0.00	1.60	44
245	18	B	3	.	30	0.20	0.90	-5
246	18	B	4	2	30	-0.40	1.70	47
247	18	B	4	.	40	-0.50	0.10	-8
248	18	B	5	2	30	-0.60	2.10	43
249	18	B	5	.	30	-0.90	1.00	2
250	18	B	6	2	30	-0.60	2.50	49
251	18	B	6	.	30	-1.00	2.40	-5
252	18	B	7	2	30	-1.00	2.60	52
253	18	C	1	1	37	1.30	2.50	58
254	18	C	1	.	92	-0.20	-2.00	-10
255	18	C	2	1	20	0.90	0.70	67
256	18	C	2	.	28	-0.10	-1.10	5
257	18	C	3	1	20	0.60	1.30	69
258	18	C	3	.	57	-0.04	-0.30	12
259	18	C	4	1	30	0.80	1.40	71
260	18	C	4	.	38	-0.90	-4.70	10
261	18	C	5	13	26	1.30	1.70	81
262	18	D	1	12	30	0.90	2.40	78
263	18	D	1	.	87	0.10	0.00	2
264	18	D	2	1	22	1.10	3.00	77
265	18	D	2	.	144	0.20	0.10	-8
266	18	D	3	1	20	1.20	3.30	73
267	25	A	1	1	51	2.00	2.30	62
268	25	A	1	.	67	1.00	-1.90	-3
269	25	A	2	1	55	1.60	1.20	64
270	25	A	2	.	49	1.00	-1.30	0
271	25	A	3	1	40	1.60	1.50	65
272	25	A	3	.	52	1.00	-1.50	-4
273	25	A	4	1	43	1.70	1.30	69
274	25	B	1	1	29	0.80	2.70	57
275	25	B	1	.	95	0.10	0.10	0
276	25	B	2	12	30	0.70	2.30	82
277	25	B	2	.	57	0.00	-0.60	12
278	25	B	3	12	30	0.60	2.00	94
279	25	B	3	.	51	0.10	-0.40	13
280	25	B	4	1	30	0.60	2.00	99

OBS	ID	BOUT	CYCLE	REAS	TIME	DEL_TRE	DEL_MSK	DEL_HR
281	25	B	4	.	50	0.10	-0.60	25
282	25	B	5	12	28	0.70	1.80	103
283	25	C	1	1	25	0.90	2.60	83
284	25	C	1	.	72	-0.10	0.20	6
285	25	C	2	1	20	0.90	2.10	83
286	25	C	2	.	65	0.00	0.40	5
287	25	C	3	1	18	0.70	1.80	38
288	25	C	3	.	62	0.00	0.40	5
289	25	C	4	1	17	0.70	2.10	35
290	25	C	4	.	56	0.00	0.20	5
291	25	C	5	1	17	0.50	2.10	86
292	25	C	5	.	67	-0.10	-0.10	1
293	25	C	6	12	15	0.60	1.80	16
294	25	D	1	13	22	1.10	2.70	43
295	25	D	1	.	61	0.40	0.40	1
296	25	D	2	13	16	1.20	2.40	61
297	25	D	2	.	89	0.30	1.23	2
298	25	D	3	1	19	1.20	2.60	88
299	25	D	3	.	100	0.40	0.70	3
300	25	D	4	1	17	1.40	2.60	91
301	25	D	4	.	84	0.40	0.90	5
302	25	D	5	1	17	1.50	3.40	100
303	31	A	1	1	114	0.60	2.20	53
304	31	A	1	.	61	0.10	-3.60	15
305	31	A	2	3	115	0.50	3.30	33
306	31	A	2	.	33	0.40	-2.90	24
307	31	A	3	2	74	0.30	2.40	103
308	31	B	1	1	30	0.40	1.90	50
309	31	B	1	.	30	0.30	-0.50	-3
310	31	B	2	1	30	0.60	2.30	50
311	31	B	2	.	30	0.21	-0.90	-2
312	31	B	3	1	30	0.60	1.80	53
313	31	B	3	.	30	0.20	-1.10	-5
314	31	B	4	1	30	0.50	1.60	54
315	31	B	4	.	30	0.20	-1.20	-12
316	31	B	5	1	30	0.40	1.30	43
317	31	B	5	.	30	0.10	-1.60	-6
318	31	B	6	1	30	0.40	1.50	53
319	31	B	6	.	30	0.10	-1.20	-5
320	31	B	7	1	30	0.40	1.70	64
321	31	B	7	.	30	0.20	-1.10	-1
322	31	B	8	1	15	0.50	1.30	44
323	31	C	1	1	35	0.70	2.30	58
324	31	C	1	.	68	-0.10	-0.90	21
325	31	C	2	1	31	0.80	1.80	69
326	31	C	2	.	98	0.00	-1.10	2
327	31	C	3	1	27	0.70	1.80	70
328	31	C	3	.	92	0.00	-0.70	-8
329	31	C	4	1	29	0.70	1.70	73
330	31	D	1	12	30	0.80	2.20	40
331	31	D	1	.	65	0.20	-0.60	-19
332	31	D	2	1	27	1.00	2.10	80
333	31	D	2	.	29	0.20	-0.70	-11
334	31	D	3	1	30	1.20	2.20	62
335	31	D	3	.	103	0.20	-1.20	-4
336	31	D	4	1	30	1.20	2.10	82

OBS	ID	BOUT	CYCLE	REAS	TIME	DEL_TRE	DEL_MSK	DEL_HR
337	7	A	1	1	40	0.7	2.4	29
338	7	A	1	.	75	0.0	-5.0	-11
339	7	A	2	1	52	0.9	1.2	30
340	7	A	2	0	75	0.0	-1.5	-6
341	7	A	3	1	50	0.7	0.9	26
342	7	A	3	.	45	0.0	-1.1	-9
343	7	A	4	1	31	0.4	1.2	22
344	7	B	1	12	30	0.6	1.1	19
345	7	B	1	.	66	0.1	-0.5	-31
346	7	B	2	2	30	0.3	2.5	31
347	7	B	2	.	30	0.2	-0.5	-6
348	7	B	3	12	30	0.7	2.3	29
349	7	B	3	.	49	-0.7	0.0	-11
350	7	B	4	12	30	0.4	2.6	38
351	7	B	4	.	31	0.5	0.6	-8
352	7	B	5	1	16	0.7	2.6	32
353	7	B	5	.	83	0.0	-1.3	-11
354	7	B	6	2	15	0.2	1.7	24
355	7	D	1	12	30	0.8	3.4	51
356	7	D	1	.	189	0.0	0.1	-16
357	7	D	2	1	20	0.7	1.0	58
358	7	D	2	.	121	0.0	-0.6	-7
359	7	D	3	1	17	0.8	1.3	51
360	7	C	1	1	40	1.3	1.9	60
361	7	C	1	.	111	0.2	-1.9	4
362	7	C	2	1	38	1.0	1.8	53
363	7	C	2	.	71	0.3	-3.4	2
364	7	C	3	1	40	0.9	1.6	59
365	7	C	3	.	58	0.2	-1.0	10
366	7	C	4	1	37	1.2	2.0	63
367	28	A	1	1	28	0.8	1.8	54
368	28	A	1	.	59	0.0	-1.2	4
369	28	A	2	1	29	0.7	2.1	51
370	28	A	2	.	67	0.0	-1.3	-10
371	28	A	3	1	28	0.8	1.9	64
372	28	A	3	.	51	0.0	-1.0	12
373	28	A	4	1	20	0.6	1.4	58
374	28	A	4	.	50	0.0	0.0	-3
375	28	A	5	1	27	0.7	1.9	71
376	28	B	1	1	12	0.6	2.3	60
377	28	B	1	.	47	0.2	1.8	-9
378	28	B	2	1	16	1.0	2.0	63
379	28	B	2	.	63	0.0	2.1	-1
380	28	B	3	1	16	0.6	2.1	60
381	28	B	3	.	71	0.0	2.0	-9
382	28	B	4	1	17	0.7	2.0	58
383	28	B	4	.	72	0.0	2.1	0
384	28	B	5	1	17	0.6	1.7	52
385	28	C	1	1	26	0.8	1.7	50
386	28	C	1	.	64	-0.1	2.6	-5
387	28	C	2	1	20	0.9	2.7	53
388	28	C	2	.	138	-0.1	2.7	-1
389	28	C	3	1	17	0.7	1.9	48
390	28	D	1	12	30	0.9	2.2	68
391	28	D	1	.	105	0.0	-2.2	0
392	28	D	2	1	17	0.9	-2.7	65

OBS	ID	BOUT	CYCLE	REAS	TIME	DEL_TRE	DEL_MSK	DEL_HR
393	28	D	2	.	118	0.1	0.5	14
394	28	D	3	1	17	0.9	2.4	53
395	6	A	1	1	45	0.6	1.9	32
396	6	A	1	.	52	-0.1	-1.2	-11
397	6	A	2	1	59	0.5	1.7	51
398	6	A	2	.	75	0.0	-2.2	-15
399	6	A	3	1	58	0.6	1.8	52
400	6	B	1	1	30	0.5	2.3	28
401	6	B	1	.	30	0.1	0.7	-25
402	6	B	2	12	30	0.8	2.3	35
403	6	B	2	.	45	0.2	-0.9	-20
404	6	B	3	1	30	0.9	2.1	33
405	6	B	3	.	38	0.1	-1.0	-10
406	6	B	4	12	30	0.9	-2.8	29
407	6	B	4	.	80	0.2	0.0	6
408	6	B	5	12	30	0.8	1.3	37
409	6	B	5	.	52	0.1	-1.0	10
410	6	B	6	1	22	1.0	2.9	30
411	6	C	1	1	28	0.8	2.2	29
412	6	C	1	.	41	0.5	-0.5	-25
413	6	C	2	1	23	-0.2	1.6	25
414	6	C	2	.	103	0.6	-1.4	-17
415	6	C	3	1	30	0.3	2.1	22
416	6	D	1	12	30	0.8	2.2	49
417	6	D	1	.	49	0.2	0.6	-1
418	6	D	2	1	24	1.1	1.9	62
419	6	D	2	.	50	0.0	-1.6	-1
420	6	D	3	1	18	1.1	2.1	51
421	6	D	3	.	42	-0.1	-1.3	3
422	6	D	4	1	24	0.7	0.7	63
423	6	D	4	.	32	-0.1	-1.0	5
424	6	D	5	1	29	0.1	1.7	81
425	20	A	1	3	65	0.8	1.9	74
426	20	A	1	.	16	0.5	0.4	15
427	20	A	2	3	46	0.9	2.5	71
428	20	A	2	.	32	0.1	-1.7	10
429	20	A	3	3	29	0.7	-0.4	68
430	20	A	3	.	46	-0.2	-2.0	5
431	20	A	4	3	50	0.6	2.3	72
432	20	A	4	.	33	0.0	-1.0	25
433	20	A	5	3	25	0.1	8.4	68
434	20	A	5	.	42	-0.2	-1.3	10
435	20	A	6	3	20	-0.4	2.2	69
436	20	B	1	2	30	0.2	1.9	38
437	20	B	1	.	30	-0.1	-0.5	-17
438	20	B	2	2	30	0.4	2.4	47
439	20	B	2	.	30	-0.5	-1.1	-17
440	20	B	3	2	30	0.1	2.9	46
441	20	B	3	.	30	-0.8	-1.4	-17
442	20	B	4	2	30	0.2	2.0	44
443	20	B	4	.	31	-0.9	-0.7	-8
444	20	B	5	2	30	-1.2	1.9	41
445	20	B	5	.	30	-1.8	1.8	-14
446	20	B	6	2	30	-1.3	2.3	59
447	20	B	6	.	30	-1.9	0.0	-5
448	20	B	7	2	30	-1.7	2.5	60

OBS	ID	BOUT	CYCLE	REAS	TIME	DEL_TRE	DEL_MSK	DEL_HR
449	20	B	7	.	30	-2.1	0.1	0
450	20	B	8	2	30	-1.7	2.5	53
451	20	C	1	12	30	1.0	3.1	58
452	20	C	1	.	118	0.3	0.2	-21
453	20	C	2	1	24	1.0	3.3	59
454	20	D	1	1	36	1.2	3.1	56
455	20	D	1	.	134	0.1	0.2	-3
456	20	D	2	1	23	1.1	3.0	53
457	20	D	2	.	78	0.1	-1.0	-8
458	20	D	3	13	34	2.0	3.5	60
459	29	A	1	1	28	0.6	1.4	54
460	29	A	1	.	53	-0.1	-0.6	-22
461	29	A	2	1	35	0.5	1.0	59
462	29	A	2	.	47	0.0	-0.4	-11
463	29	A	3	1	30	0.6	1.0	48
464	29	A	3	.	45	0.0	-1.0	-25
465	29	A	4	1	32	0.7	1.1	60
466	29	A	4	.	48	-0.3	-1.8	-11
467	29	A	5	1	38	0.6	0.7	49
468	29	A	5	.	49	0.0	-1.3	-16
469	29	A	6	2	15	0.2	0.1	40
470	29	B	1	12	30	0.7	3.0	72
471	29	B	1	.	35	-0.1	0.2	18
472	29	B	2	12	30	0.7	2.4	82
473	29	B	2	.	32	0.0	0.1	22
474	29	B	3	12	30	0.7	2.2	62
475	29	B	3	.	30	-0.2	0.2	1
476	29	B	4	12	30	0.5	2.2	81
477	29	B	4	.	30	-0.1	0.2	2
478	29	B	5	12	30	0.8	2.3	97
479	29	C	1	1	28	0.8	1.8	65
480	29	C	1	.	82	0.2	0.1	-11
481	29	C	2	1	37	1.2	2.3	86
482	29	C	2	.	93	0.0	-0.2	7
483	29	C	3	1	36	1.1	2.2	79
484	29	C	3	.	85	0.2	0.4	-14
485	29	C	4	1	26	0.9	2.1	79
486	29	D	1	12	30	0.8	2.5	58
487	29	D	1	.	35	0.0	1.0	-2
488	29	D	2	3	16	0.4	2.5	54
489	29	D	2	.	32	0.0	0.9	-17
490	29	D	3	12	30	0.7	2.9	68
491	29	D	3	.	34	0.2	1.3	6
492	29	D	4	3	15	0.6	3.0	21
493	17	A	1	3	78	0.1	3.0	28
494	17	A	1	.	46	-0.4	1.7	4
495	17	A	2	3	95	0.2	3.0	33
496	17	A	2	.	37	-0.3	.	5
497	17	A	3	3	40	0.3	2.7	47
498	17	A	3	.	44	-0.5	-0.3	9
499	17	A	4	3	80	-0.4	3.1	43
500	17	B	1	2	30	0.5	1.1	54
501	17	B	1	.	32	0.1	.	-3
502	17	B	2	2	30	0.3	.	38
503	17	B	2	.	31	-0.2	.	0
504	17	B	3	2	30	0.4	.	69

OBS	ID	BOUT	CYCLE	REAS	TIME	DEL_TRE	DEL_MSK	DEL_HR
505	17	B	3	.	30	0.0	.	0
506	17	B	4	2	30	0.3	.	77
507	17	B	4	.	30	-0.2	.	5
508	17	B	5	2	30	0.2	.	81
509	17	B	5	.	31	-0.1	.	7
510	17	B	6	2	30	0.1	.	73
511	17	B	6	.	27	-0.4	.	11
512	17	B	7	2	33	-0.2	.	78
513	17	B	7	.	27	-0.6	.	15
514	17	B	8	2	30	-0.4	.	84
515	17	C	1	13	57	1.4	4.1	90
516	17	C	1	.	62	0.2	1.3	5
517	17	C	2	1	30	1.1	4.0	101
518	17	C	2	.	90	0.2	0.4	8
519	17	C	3	13	33	1.5	3.5	76
520	17	C	3	.	69	0.2	1.2	3
521	17	C	4	13	25	1.5	3.8	87
522	17	D	1	2	30	0.4	3.5	34
523	17	D	1	.	30	0.0	0.7	5
524	17	D	2	12	30	0.8	2.5	52
525	17	D	2	.	81	-0.1	0.6	37
526	17	D	3	12	30	0.6	-2.6	76
527	17	D	3	.	67	-0.2	-0.7	35
528	17	D	4	13	27	1.1	2.8	81
529	10	A	1	1	76	2.0	3.3	52
530	10	A	1	.	41	1.4	0.6	15
531	10	A	2	1	53	2.0	2.5	58
532	10	A	2	.	41	1.4	-0.4	21
533	10	A	3	1	97	1.9	2.1	40
534	10	A	3	.	41	1.3	-1.0	14
535	10	A	4	1	79	2.2	2.4	44
536	10	B	1	1	30	1.2	1.7	46
537	10	B	1	.	30	1.0	0.7	10
538	10	B	2	1	30	1.5	1.9	49
539	10	B	2	.	30	1.3	0.7	15
540	10	B	3	12	30	1.7	2.1	97
541	10	B	3	.	62	1.1	-1.0	2
542	10	B	4	2	29	1.2	1.3	46
543	10	B	4	.	29	1.3	0.3	10
544	10	B	5	12	29	1.7	1.7	50
545	10	B	5	.	67	1.0	-0.6	0
546	10	B	6	12	30	1.7	1.5	46
547	10	C	1	13	69	2.8	4.0	62
548	10	C	1	.	114	1.0	0.6	-12
549	10	C	2	1	30	1.8	3.5	53
550	10	D	1	12	30	1.6	3.1	51
551	10	D	1	.	97	1.0	0.4	-8
552	10	D	2	12	30	1.3	2.4	58
553	10	D	2	.	200	1.0	0.3	-6
554	10	D	3	1	19	1.8	0.9	48
555	34	A	1	1	37	0.7	2.7	47
556	34	A	1	.	39	0.1	-2.2	-14
557	34	A	2	1	28	0.9	1.6	45
558	34	A	2	.	35	0.2	-2.0	-21
559	34	A	3	1	25	0.7	1.7	49
560	34	A	3	.	35	0.2	-1.7	-4

OBS	ID	BOUT	CYCLE	REAS	TIME	DEL_TRE	DEL_MSK	DEL_HR
561	34	A	4	1	36	0.70	2.2	26
562	34	A	4	.	39	0.20	-2.4	-22
563	34	A	5	1	29	0.50	2.3	27
564	34	A	5	.	41	0.13	-2.4	-21
565	34	A	6	1	38	0.80	2.6	31
566	34	B	1	2	30	0.30	2.5	34
567	34	B	1	.	30	-0.20	-2.4	-31
568	34	B	2	12	30	0.50	2.3	44
569	34	B	2	.	31	0.00	-3.2	-35
570	34	B	3	1	17	0.50	2.6	25
571	34	B	3	.	30	0.40	-3.2	-25
572	34	B	4	2	30	0.40	3.2	27
573	34	B	4	.	30	-0.50	-3.0	-26
574	34	B	5	2	30	0.20	3.2	42
575	34	B	5	.	30	-0.40	-3.6	-27
576	34	B	6	.	30	0.40	1.7	33
577	34	B	6	.	30	-0.20	-1.7	-26
578	34	B	7	2	30	0.40	3.3	36
579	34	B	7	.	30	-0.40	-3.0	-27
580	34	B	8	2	30	0.40	2.9	29
581	34	C	1	1	38	0.70	3.5	48
582	34	C	1	.	61	0.00	-2.5	9
583	34	C	2	1	27	0.90	2.7	80
584	34	C	2	.	61	0.20	-2.2	28
585	34	C	3	1	16	1.00	2.0	74
586	34	C	3	.	49	0.10	-2.1	4
587	34	C	4	1	20	0.70	2.5	78
588	34	D	1	2	30	0.50	2.9	56
589	34	D	1	.	30	0.10	-0.5	5
590	34	D	2	1	24	0.80	2.0	77
591	34	D	2	.	58	0.10	-2.3	6
592	34	D	3	1	16	0.70	2.2	74
593	34	D	3	.	65	0.20	-2.2	6
594	34	D	4	1	18	0.90	2.4	67
595	34	D	4	.	57	0.10	-2.1	5
596	34	D	5	1	17	0.80	2.2	59
597	34	D	5	.	70	0.20	-1.9	7
598	34	D	6	1	17	1.00	1.9	68
599	33	A	1	1	27	0.40	2.3	45
600	33	A	1	.	36	-0.20	-1.1	-7
601	33	A	2	1	19	0.30	1.4	32
602	33	A	2	.	26	-0.20	-1.8	-3
603	33	A	3	1	38	0.40	1.7	39
604	33	A	3	.	30	-0.30	-2.0	-4
605	33	A	4	1	61	0.60	1.5	58
606	33	A	4	.	30	-0.20	-2.7	4
607	33	A	5	1	96	0.40	3.2	49
608	33	A	5	1	26	-0.30	-3.2	-1
609	33	A	6	1	35	0.00	2.0	39
610	33	B	1	12	30	0.60	2.9	67
611	33	B	1	.	112	0.00	-1.5	1
612	33	B	2	2	30	0.80	2.0	76
613	33	B	2	.	81	-0.10	-2.1	-3
614	33	B	3	2	30	0.40	1.6	61
615	33	B	3	.	30	0.30	-1.6	3
616	33	B	4	1	13	0.60	1.8	63

OBS	ID	BOUT	CYCLE	REAS	TIME	DEL_TRE	DEL_MSK	DEL_HR
617	33	B	4	.	59	-0.1	-2.5	7
618	33	B	5	2	30	0.6	2.8	75
619	33	C	1	1	31	0.5	3.4	57
620	33	C	1	.	82	0.0	-2.5	8
621	33	C	2	1	31	0.8	2.7	63
622	33	C	2	.	105	0.1	-2.6	9
623	33	C	3	1	30	0.6	2.6	77
624	33	C	3	.	59	0.1	-2.7	6
625	33	C	4	1	37	0.6	2.7	83
626	33	D	1	12	30	0.7	3.1	58
627	33	D	1	.	92	0.1	0.5	-10
628	33	D	2	1	28	0.9	3.4	57
629	33	D	2	.	76	0.2	0.5	-6
630	33	D	3	1	23	1.0	.	76
631	33	D	3	.	78	0.2	0.3	8
632	33	D	4	1	28	1.0	3.3	53
633	4	A	1	1	35	0.5	1.4	23
634	4	A	1	.	45	-0.1	-0.3	-3
635	4	A	2	1	40	0.7	1.3	24
636	4	A	2	.	65	-0.1	-0.3	-3
637	4	A	3	1	34	0.5	0.6	23
638	4	A	3	.	85	-0.1	-0.2	1
639	4	A	4	1	40	0.5	1.3	20
640	4	B	1	12	30	0.7	2.3	10
641	4	B	1	.	30	0.5	1.3	.
642	4	B	2	1	15	0.6	2.4	36
643	4	B	2	.	92	0.1	0.4	.
644	4	B	3	12	30	0.8	2.4	38
645	4	C	1	1	28	0.8	1.5	.
646	4	D	1	1	30	0.7	2.7	.
647	4	D	1	.	181	0.0	0.3	-20
648	4	D	2	1	26	0.9	3.1	46
649	4	D	2	.	181	0.0	-1.3	-12
650	4	D	3	1	28	0.7	2.3	39
651	2	A	1	1	140	0.9	0.8	48
652	2	A	1	.	34	0.0	-0.3	21
653	2	A	2	1	77	1.0	-1.3	55
654	2	A	2	.	33	-1.4	-2.8	5
655	2	A	3	3	47	-0.4	-1.9	34
656	2	B	1	12	30	0.5	1.8	17
657	2	B	1	.	82	-0.2	-1.2	-32
658	2	B	2	12	30	0.5	1.9	19
659	2	B	2	.	161	-0.2	1.2	-25
660	2	B	3	12	30	0.5	1.6	12
661	2	C	1	1	37	0.8	2.9	19
662	2	D	1	2	30	1.3	2.5	76
663	2	D	1	.	30	1.0	-0.2	10
664	2	D	2	1	19	1.8	2.5	65
665	2	D	2	.	110	0.8	-2.4	14
666	2	D	3	1	10	1.5	1.1	39
667	2	D	3	.	52	0.8	-2.0	-11
668	2	D	4	1	14	1.5	1.7	59
669	41	A	1	1	58	0.9	0.9	63
670	41	A	1	.	27	0.1	-1.6	-4
671	41	A	2	1	46	0.8	0.5	53
672	41	A	2	.	23	-0.3	-1.7	10

OBS	ID	BOUT	CYCLE	REAS	TIME	DEL_TRE	DEL_MSK	DEL_HR
673	41	A	3	3	75	0.4	0.9	56
674	41	A	3	.	29	0.0	-1.2	1
675	41	A	4	3	75	0.4	-0.1	67
676	41	A	4	.	34	-0.3	-2.1	7
677	41	A	5	1	19	0.0	-1.1	48
678	41	B	1	12	30	1.2	3.9	72
679	41	B	1	.	41	0.5	1.0	19
680	41	B	2	2	30	0.9	3.3	69
681	41	B	2	.	30	0.3	-0.4	17
682	41	B	3	1	28	1.1	3.5	83
683	41	B	3	.	35	0.5	0.4	19
684	41	B	4	2	30	1.0	3.6	72
685	41	B	4	.	30	0.5	1.0	15
686	41	B	5	2	30	0.5	2.9	77
687	41	B	5	.	30	0.5	0.2	16
688	41	B	6	2	30	0.8	1.6	72
689	41	B	6	.	30	0.5	-1.0	2
690	41	B	7	2	30	0.9	1.7	80
691	41	C	1	1	36	2.7	2.7	85
692	41	C	1	.	80	-0.2	-0.2	10
693	41	C	2	1	27	2.1	2.1	73
694	41	C	2	.	59	-0.4	-0.4	12
695	41	C	3	1	27	1.7	1.7	107
696	41	C	3	.	67	-0.8	-0.8	7
697	41	C	4	1	35	2.2	2.2	111
698	41	C	4	.	80	-0.6	-0.6	16
699	41	C	5	2	19	1.2	1.2	108
700	41	D	1	12	30	0.8	3.0	84
701	41	D	1	.	93	0.0	1.8	-10
702	41	D	2	12	30	1.7	3.2	93
703	41	D	2	.	90	0.1	1.7	18
704	41	D	3	1	19	0.8	3.0	93
705	41	D	3	.	61	1.0	1.4	22
706	41	D	4	1	18	0.7	3.1	91
707	50	A	1	1	76	0.5	1.9	14
708	50	A	1	.	46	0.0	1.4	-15
709	50	A	2	1	76	0.8	1.4	26
710	50	A	2	.	37	0.0	-1.5	-1
711	50	A	3	1	117	0.6	1.4	25
712	50	A	3	.	33	-0.1	-1.7	2
713	50	A	4	2	55	0.4	1.1	80
714	50	B	1	2	30	0.3	2.4	.
715	50	B	1	.	30	0.0	0.0	-3
716	50	B	2	2	30	0.3	2.2	46
717	50	B	2	.	30	0.0	0.2	0
718	50	B	3	2	30	0.4	2.0	48
719	50	B	3	.	30	0.1	-0.4	2
720	50	B	4	2	30	0.4	2.0	46
721	50	B	4	.	30	0.1	-0.5	-4
722	50	B	5	12	30	0.5	2.1	47
723	50	B	5	.	30	0.0	-0.2	-3
724	50	B	6	2	30	0.2	2.5	57
725	50	B	6	.	30	-0.3	-0.3	1
726	50	B	7	2	30	0.1	1.9	54
727	50	C	1	1	38	0.8	2.3	64
728	50	C	1	.	62	-0.1	-0.1	1

OBS	ID	BOUT	CYCLE	REAS	TIME	DEL_TRE	DEL_MSK	DEL_HR
729	50	C	2	1	26	0.70	2.0	67
730	50	C	2	.	56	-0.10	0.0	3
731	50	C	3	1	21	0.60	2.0	65
732	50	C	3	.	48	0.00	0.4	3
733	50	C	4	1	19	0.60	1.9	67
734	50	C	4	.	54	0.00	0.4	7
735	50	C	5	1	20	0.70	2.2	69
736	50	C	5	.	78	0.00	-0.2	0
737	50	C	6	2	15	0.40	1.6	48
738	50	D	1	12	30	0.50	2.2	41
739	50	D	1	.	62	-0.10	-0.3	3
740	50	D	2	1	18	0.60	2.4	56
741	50	D	2	.	69	-0.10	-0.1	0
742	50	D	3	1	18	0.60	2.4	63
743	50	D	3	.	108	-0.10	-0.4	9
744	50	D	4	1	16	0.60	1.8	66
745	50	D	4	.	68	-0.20	-0.6	18
746	50	D	5	1	16	0.60	1.7	68
747	5	A	1	1	45	0.70	1.8	18
748	5	A	1	.	71	-0.80	0.0	6
749	5	A	2	1	36	1.10	1.6	19
750	5	A	2	.	38	-0.50	-0.2	-10
751	5	A	3	1	48	0.60	1.7	42
752	5	A	3	.	60	-0.40	-0.6	.
753	5	A	4	1	76	1.60	2.1	52
754	5	B	1	1	27	0.80	2.9	27
755	5	B	1	.	51	0.00	0.4	20
756	5	B	2	1	24	0.90	2.4	30
757	5	B	2	.	79	0.00	0.4	-9
758	5	B	3	1	27	0.70	2.0	50
759	5	B	3	.	44	0.00	0.4	-9
760	5	B	4	1	28	0.90	2.7	61
761	5	B	4	.	69	0.00	0.1	-1
762	5	B	5	1	29	1.10	2.3	66
763	5	C	1	1	38	1.10	3.0	34
764	5	C	1	.	76	0.20	0.7	.
765	5	C	2	1	30	1.20	3.0	72
766	5	C	2	.	87	0.10	0.9	3
767	5	C	3	1	24	0.80	2.7	61
768	5	C	3	.	70	0.10	0.9	1
769	5	C	4	1	40	1.04	3.6	84
770	5	D	1	12	30	0.70	4.1	83
771	5	D	1	.	97	-0.10	2.2	20
772	5	D	2	12	30	1.00	4.2	82
773	5	D	2	.	82	-0.10	2.1	32
774	5	D	3	1	29	1.00	4.7	118
775	5	D	3	.	137	0.00	1.6	23
776	5	D	4	12	30	0.90	4.2	.
777	24	A	1	1	52	1.20	3.2	65
778	24	A	1	.	92	0.40	-1.4	-16
779	24	A	2	1	52	1.10	1.9	40
780	24	A	2	.	60	0.40	-0.2	-10
781	24	A	3	1	64	1.10	2.6	74
782	24	A	3	.	31	0.30	-0.6	10
783	24	A	4	1	28	1.10	2.6	51
784	24	A	4	.	21	0.40	0.3	1

OBS	ID	BOUT	CYCLE	REAS	TIME	DEL_TRE	DEL_MSK	DEL_HR
785	24	A	5	1	27	1.0	2.7	55
786	24	B	1	12	30	0.6	2.2	55
787	24	B	1	.	68	-0.1	-0.1	-6
788	24	B	2	12	30	0.5	2.1	57
789	24	B	2	.	115	-0.1	0.1	0
790	24	B	3	12	30	0.5	2.1	85
791	24	C	1	1	65	2.5	4.5	88
792	24	C	1	.	161	0.3	-0.5	13
793	24	C	2	1	19	1.0	2.7	89
794	24	C	2	.	58	0.3	1.8	14
795	24	C	3	1	14	1.4	3.6	83
796	24	C	3	.	49	0.2	0.2	6
797	24	C	4	1	21	1.1	3.3	76
798	24	C	4	.	51	0.4	0.9	11
799	24	C	5	1	15	1.3	3.4	85
800	24	D	1	2	30	0.9	2.8	85
801	24	D	1	.	30	0.7	1.7	11
802	24	D	2	1	16	1.2	2.5	85
803	24	D	2	.	30	0.2	-0.7	27
804	24	D	3	1	16	1.1	2.1	88
805	24	D	3	.	109	0.4	-0.4	19
806	24	D	4	1	16	1.2	2.1	81
807	1	A	1	1	115	1.4	2.7	73
808	1	A	1	.	43	0.8	-0.7	32
809	1	A	2	13	160	1.5	-2.6	57
810	1	B	1	2	30	0.2	2.1	39
811	1	B	1	.	30	0.0	-0.6	11
812	1	B	2	2	30	0.1	2.4	38
813	1	B	2	.	30	-0.7	0.2	-5
814	1	B	3	2	30	0.5	0.4	.
815	1	B	3	.	30	0.0	-0.9	15
816	1	B	4	2	30	0.5	-0.2	49
817	1	B	4	.	30	-0.1	-0.6	7
818	1	B	5	2	30	0.1	2.3	.
819	1	B	5	.	30	0.0	-0.1	9
820	1	B	6	12	30	0.9	0.8	47
821	1	C	1	1	60	1.6	4.3	.
822	1	C	1	.	81	0.5	1.9	.
823	1	C	2	1	60	1.7	3.5	.
824	1	C	2	.	176	0.7	0.3	.
825	1	C	3	1	39	1.2	4.8	.
826	1	D	1	2	30	0.7	3.5	54
827	1	D	1	.	30	0.5	2.3	4
828	1	D	2	1	15	1.1	3.4	55
829	1	D	2	.	105	0.6	1.3	17
830	1	D	3	1	26	1.4	3.2	90
831	1	D	3	.	124	0.6	0.4	18
832	1	D	4	1	30	1.6	3.6	97
833	15	A	1	3	120	0.6	1.5	27
834	15	A	1	.	30	0.5	-0.3	-10
835	15	A	2	3	95	0.5	2.1	45
836	15	A	2	.	30	0.3	0.3	23
837	15	A	3	3	60	0.4	1.8	20
838	15	A	3	.	30	0.2	0.1	-17
839	15	A	4	3	10	0.3	0.1	23
840	15	B	1	2	30	0.1	1.1	30

OBS	ID	BOUT	CYCLE	REAS	TIME	DEL_TRE	DEL_MSK	DEL_HR
841	15	B	1	.	30	0.1	-1.2	5
842	15	B	2	2	30	0.3	1.3	60
843	15	B	2	.	30	-0.1	-1.5	3
844	15	B	3	2	30	0.1	1.4	52
845	15	B	3	.	30	-1.9	1.2	15
846	15	B	4	2	30	0.3	-0.1	60
847	15	B	4	.	30	-0.2	-1.7	0
848	15	B	5	2	30	-0.1	-1.9	61
849	15	B	5	.	30	0.2	1.6	-6
850	15	B	6	2	30	0.2	1.0	61
851	15	B	6	.	30	-0.1	-1.2	-1
852	15	B	7	2	30	0.2	0.2	55
853	15	B	7	.	30	0.0	-2.2	-8
854	15	B	8	2	30	0.3	1.9	49
855	15	C	1	13	48	1.6	3.0	92
856	15	C	1	.	58	0.5	2.3	10
857	15	C	2	13	30	1.1	-3.6	99
858	15	C	2	.	87	0.3	-0.3	10
859	15	C	3	13	25	1.0	2.1	102
860	15	C	3	.	82	0.3	1.0	11
861	15	C	4	13	23	0.9	0.0	90
862	15	D	1	12	30	0.7	2.6	74
863	15	D	1	.	57	0.2	-0.3	-17
864	15	D	2	12	30	1.1	2.4	80
865	15	D	2	.	59	0.2	0.2	-12
866	15	D	3	1	22	0.9	2.0	73
867	15	D	3	.	62	0.2	-0.4	-14
868	15	D	4	1	26	0.9	1.3	25
869	15	D	4	.	64	0.2	0.1	-8
870	15	D	5	1	22	0.8	2.0	81
871	13	A	1	1	34	0.6	2.3	46
872	13	A	1	.	77	-0.1	0.1	8
873	13	A	2	1	35	0.6	1.9	47
874	13	A	2	.	116	-0.1	0.4	3
875	13	A	3	1	35	0.7	1.9	57
876	13	B	1	1	18	0.7	3.4	50
877	13	B	1	.	81	-0.1	1.4	-8
878	13	B	2	1	26	0.7	3.3	50
879	13	B	2	.	53	-0.1	0.8	-5
880	13	B	3	12	30	0.6	1.2	46
881	13	B	3	.	45	-0.1	0.8	-22
882	13	B	4	1	22	0.8	3.2	35
883	13	B	4	.	61	0.0	0.4	-20
884	13	B	5	12	30	0.8	3.3	45
885	13	C	1	1	48	1.1	3.9	62
886	13	C	1	.	49	0.3	1.6	-2
887	13	C	2	1	35	1.2	2.9	61
888	13	C	2	.	49	0.4	2.7	-4
889	13	C	3	1	30	1.4	4.4	64
890	13	C	3	.	78	0.3	1.6	-6
891	13	C	4	1	32	1.2	-1.7	63
892	13	C	4	.	58	0.4	1.9	-8
893	13	C	5	1	31	1.2	3.8	50
894	13	D	1	12	30	0.9	3.1	34
895	13	D	1	.	105	0.1	1.4	0
896	13	D	2	1	19	1.0	3.4	39

OBS	ID	BOUT	CYCLE	REAS	TIME	DEL_TRE	DEL_MSK	DEL_HR
897	37	A	1	1	37	0.7	2.3	51
898	37	A	1	.	43	0.1	0.3	-3
899	37	A	2	1	57	0.8	2.8	56
900	37	A	2	.	30	0.1	0.1	-12
901	37	A	3	1	77	0.8	2.4	47
902	37	A	3	.	36	0.0	-0.9	-8
903	37	A	4	1	99	0.8	2.4	63
904	37	A	4	.	24	-0.1	-0.1	-6
905	37	A	5	2	42	0.5	1.1	31
906	37	B	1	2	30	0.5	2.4	52
907	37	B	1	.	30	0.1	-0.8	-4
908	37	B	2	12	30	0.7	2.0	55
909	37	B	2	.	32	0.0	-0.8	-4
910	37	B	3	2	30	0.6	1.4	46
911	37	B	3	.	30	0.1	-0.8	-3
912	37	B	4	2	30	0.6	1.7	49
913	37	B	4	.	30	0.1	-0.1	-1
914	37	B	5	2	30	0.5	1.5	51
915	37	B	5	.	30	0.0	-1.3	12
916	37	B	6	2	30	0.5	1.5	51
917	37	B	6	.	30	0.0	-1.5	1
918	37	B	7	2	30	0.4	1.3	51
919	37	B	7	.	30	0.0	-1.0	-1
920	37	B	8	2	22	0.2	1.1	39
921	37	C	1	1	47	1.3	3.5	77
922	37	C	1	.	103	0.4	0.9	10
923	37	C	2	1	29	1.2	3.2	77
924	37	C	2	.	105	0.4	2.1	9
925	37	C	3	1	28	1.0	3.2	77
926	37	C	3	.	69	0.4	1.0	8
927	37	C	4	1	28	1.1	3.0	90
928	37	D	1	2	30	0.9	3.1	86
929	37	D	1	.	30	0.6	1.8	30
930	37	D	2	1	21	1.3	3.5	97
931	37	D	2	.	56	0.6	0.9	16
932	37	D	3	1	21	1.3	3.2	93
933	37	D	3	.	51	0.6	0.9	25
934	37	D	4	1	21	1.3	3.2	108
935	37	D	4	.	40	0.6	1.1	26
936	37	D	5	1	22	1.2	3.3	108
937	37	D	5	.	42	0.7	2.9	30
938	37	D	6	1	17	1.3	3.1	100
939	37	D	6	.	36	0.6	1.5	27
940	37	D	7	1	16	1.3	3.2	90
941	21	A	1	1	71	1.1	3.2	46
942	21	A	1	.	39	0.5	-0.4	-7
943	21	A	2	1	38	1.1	3.9	46
944	21	A	2	.	50	0.5	-0.2	-2
945	21	A	3	1	39	1.2	2.9	58
946	21	A	3	.	31	0.5	-1.4	-7
947	21	A	4	1	33	1.2	-3.1	28
948	21	A	4	.	34	0.5	-6.1	-9
949	21	A	5	1	30	1.1	-2.9	47
950	21	B	1	1	30	0.5	2.5	33
951	21	B	1	.	30	-0.2	-0.6	-4
952	21	B	2	12	30	1.0	2.9	45

OBS	ID	BOUT	CYCLE	REAS	TIME	DEL_TRE	DEL_MSK	DEL_HR
953	21	B	2	.	45	0.4	0.0	4
954	21	B	3	12	30	0.9	2.5	55
955	21	B	3	.	39	0.3	-0.7	4
956	21	B	4	1	30	0.9	2.0	50
957	21	B	4	.	50	0.3	-1.2	-6
958	21	B	5	2	30	0.5	1.9	45
959	21	B	5	.	35	0.3	3.0	0
960	21	B	6	12	30	0.8	2.2	55
961	21	C	1	1	36	0.5	1.6	43
962	21	C	1	.	151	0.0	-1.5	-5
963	21	C	2	1	17	0.4	1.2	49
964	21	C	2	.	115	0.0	-1.7	-14
965	21	C	3	1	28	0.7	1.6	38
966	21	D	1	12	30	0.7	1.9	58
967	3	A	1	1	45	1.1	1.6	28
968	3	A	1	.	38	0.5	0.4	-12
969	3	A	2	1	20	1.1	-0.8	24
970	3	A	2	.	34	0.5	1.0	-20
971	3	A	3	1	60	1.3	1.5	28
972	3	A	3	.	36	0.5	0.6	-8
973	3	A	4	1	56	1.2	2.8	65
974	3	A	4	.	38	0.4	1.9	0
975	3	A	5	1	32	1.1	2.7	58
976	3	A	5	.	30	0.4	-0.9	23
977	3	A	6	1	46	1.1	2.2	62
978	3	B	1	2	30	0.7	2.2	45
979	3	B	1	.	30	0.4	-0.1	-4
980	3	B	2	2	30	1.1	2.7	60
981	3	B	2	.	30	0.7	-0.5	-6
982	3	B	3	12	30	1.3	2.6	63
983	3	B	3	.	38	-1.3	-2.0	-8
984	3	B	4	2	31	0.9	1.7	65
985	3	B	4	.	30	0.5	-1.1	-4
986	3	B	5	2	22	0.9	2.1	55
987	3	B	5	.	30	0.5	-0.7	-3
988	3	B	6	2	30	1.0	2.8	68
989	3	B	6	.	30	0.6	2.9	-1
990	3	B	7	2	30	1.1	2.9	65
991	3	B	7	.	30	0.7	-0.5	4
992	3	B	8	2	30	1.2	4.0	76
993	3	C	1	1	56	1.6	4.1	90
994	3	C	1	.	42	0.8	2.2	17
995	3	C	2	1	26	1.6	4.1	90
996	3	C	2	.	47	0.5	2.6	18
997	3	C	3	1	29	1.9	4.4	95
998	3	C	3	.	58	0.8	2.1	15
999	3	C	4	1	29	1.7	4.0	94
1000	3	C	4	.	56	0.8	2.2	19
1001	3	C	5	1	27	1.6	4.1	91
1002	3	D	1	2	32	1.0	1.7	60
1003	3	D	1	.	30	0.4	0.4	1
1004	3	D	2	1	22	1.5	2.6	76
1005	3	D	2	.	42	0.8	0.6	0
1006	3	D	3	12	30	-1.1	2.9	98
1007	3	D	3	.	55	0.7	0.3	3
1008	3	D	4	12	30	1.5	2.7	99

OBS	ID	BOUT	CYCLE	REAS	TIME	DEL_TRE	DEL_MSK	DEL_HR
1009	3	D	4	.	55	0.8	0.6	4
1010	3	D	5	12	30	1.7	2.8	101
1011	3	D	5	.	37	0.8	1.5	19
1012	3	D	6	1	19	1.6	3.0	92
1013	8	A	1	1	76	0.9	2.7	64
1014	8	A	1	.	38	0.3	-0.7	11
1015	8	A	2	1	36	1.0	2.2	49
1016	8	A	2	.	55	0.3	-0.8	1
1017	8	A	3	1	48	0.8	2.3	58
1018	8	A	3	.	51	0.3	-0.4	-1
1019	8	A	4	1	37	0.9	2.3	44
1020	8	A	4	.	58	0.3	0.2	1
1021	8	A	5	2	24	0.6	2.7	54
1022	8	B	1	2	30	0.4	2.4	57
1023	8	B	1	.	32	0.2	0.3	9
1024	8	B	2	2	30	0.5	2.3	69
1025	8	B	2	.	30	0.4	-0.1	6
1026	8	B	3	12	30	0.8	2.6	75
1027	8	B	3	.	21	0.3	-0.5	9
1028	8	B	4	2	30	0.7	2.2	70
1029	8	B	4	.	30	0.2	-0.7	13
1030	8	B	5	2	30	0.5	2.0	65
1031	8	B	5	.	30	0.3	-0.3	14
1032	8	B	6	2	30	0.5	1.9	64
1033	8	B	6	.	30	0.4	-0.3	11
1034	8	B	7	2	30	0.6	2.1	68
1035	8	C	1	3	28	0.4	2.0	64
1036	8	C	1	.	30	0.1	0.6	7
1037	8	C	2	13	15	0.8	2.3	90
1038	8	C	2	.	112	-0.1	-0.1	5
1039	8	C	3	13	25	0.7	2.3	59
1040	8	C	3	.	91	0.1	0.0	8
1041	8	C	4	1	25	0.8	2.3	63
1042	8	D	1	2	30	0.9	2.3	84
1043	8	D	1	.	30	0.6	0.5	10
1044	8	D	2	1	20	1.1	2.7	91
1045	8	D	2	.	44	0.5	1.9	13
1046	8	D	3	13	22	1.3	2.1	92
1047	8	D	3	.	59	0.4	-0.3	12
1048	8	D	4	1	20	1.3	2.8	80
1049	8	D	4	.	105	0.5	-0.1	15
1050	8	D	5	1	19	1.3	2.6	94
1051	44	A	1	1	56	0.3	0.5	32
1052	44	A	1	.	35	-0.2	0.9	-25
1053	44	A	2	1	40	0.3	0.1	13
1054	44	A	2	.	28	-0.3	-2.6	-24
1055	44	A	3	1	55	0.3	-0.2	22
1056	44	A	3	.	31	-0.5	-2.4	-25
1057	44	A	4	1	44	0.3	0.2	8
1058	44	A	4	.	23	-0.4	-1.9	-19
1059	44	A	5	1	62	0.3	0.0	15
1060	44	A	5	.	32	-0.3	-2.2	-27
1061	44	A	6	2	20	0.2	-0.6	16
1062	44	B	1	2	30	0.5	2.7	48
1063	44	B	1	.	30	-0.2	0.3	-15
1064	44	B	2	2	30	0.6	2.3	39

OBS	ID	BOUT	CYCLE	REAS	TIME	DEL_TRE	DEL_MSK	DEL_HR
1065	44	B	2	.	30	-0.1	-0.1	-2
1066	44	B	3	2	30	0.6	2.3	40
1067	44	B	3	.	30	-0.1	-0.7	-11
1068	44	B	4	2	30	0.6	1.3	45
1069	44	B	4	.	30	0.0	-0.4	-18
1070	44	B	5	2	30	0.5	1.8	48
1071	44	B	5	.	30	-0.2	-0.6	-12
1072	44	B	6	2	30	0.6	2.3	50
1073	44	B	6	.	30	-0.3	-0.6	-10
1074	44	B	7	2	30	0.5	1.5	47
1075	44	C	1	1	67	1.3	2.7	85
1076	44	C	1	.	62	0.5	-0.6	5
1077	44	C	2	1	35	1.4	2.3	86
1078	44	C	2	.	54	0.5	0.3	11
1079	44	C	3	1	30	1.3	1.4	94
1080	44	C	3	.	45	0.5	-1.2	20
1081	44	C	4	1	27	1.2	1.6	93
1082	44	C	4	.	44	0.6	-1.1	20
1083	44	C	5	1	28	1.2	-1.1	97
1084	44	D	1	1	18	0.3	2.1	61
1085	44	D	1	.	94	-0.1	0.1	14
1086	44	D	2	1	16	0.5	2.3	84
1087	44	D	2	.	134	-0.1	1.0	3
1088	44	D	3	1	15	0.4	2.3	84
1089	44	D	3	.	68	-0.2	0.0	3
1090	44	D	4	1	14	0.4	2.4	84
1091	42	A	1	1	89	1.0	2.2	39
1092	42	A	1	.	30	0.5	-0.8	-13
1093	42	A	2	1	97	1.0	1.2	20
1094	42	A	2	.	24	1.4	-1.8	-20
1095	42	A	3	3	115	0.8	1.1	37
1096	42	A	3	.	24	0.5	-1.9	-13
1097	42	A	4	1	56	1.1	0.9	42
1098	42	B	1	2	30	0.5	1.8	40
1099	42	B	1	.	30	0.1	-0.2	-20
1100	42	B	2	2	30	0.5	2.0	45
1101	42	B	2	.	30	0.2	0.0	-16
1102	42	B	3	2	30	0.4	1.3	41
1103	42	B	3	.	30	0.1	-0.3	19
1104	42	B	4	2	30	0.5	1.4	37
1105	42	B	4	.	30	0.2	-0.7	-30
1106	42	B	5	12	30	0.7	1.8	39
1107	42	B	5	.	31	0.1	-0.5	-23
1108	42	B	6	2	30	0.5	1.7	37
1109	42	B	6	.	30	0.2	-0.5	-28
1110	42	B	7	2	30	0.6	2.0	42
1111	42	C	1	1	44	1.4	2.6	68
1112	42	C	1	.	37	0.5	-1.9	-13
1113	42	C	2	1	39	1.7	1.4	38
1114	42	C	2	.	54	0.5	0.4	5
1115	42	C	3	3	35	1.2	2.6	64
1116	42	C	3	.	44	0.5	0.7	1
1117	42	C	4	1	39	1.4	2.9	74
1118	42	C	4	.	41	0.6	1.3	14
1119	42	C	5	1	34	1.4	2.8	64
1120	42	C	5	.	35	0.7	1.1	9

OBS	ID	BOUT	CYCLE	REAS	TIME	DEL_TRE	DEL_MSK	DEL_HR
1121	42	C	6	1	33	1.3	2.6	68
1122	42	D	1	2	30	1.2	2.2	78
1123	42	D	1	.	30	0.9	0.9	14
1124	42	D	2	12	30	1.9	2.6	81
1125	42	D	2	.	37	0.9	0.7	22
1126	42	D	3	12	30	1.8	2.4	90
1127	42	D	3	.	49	1.0	0.5	7
1128	42	D	4	12	30	1.9	2.7	96
1129	42	D	4	.	58	1.1	0.6	16
1130	42	D	5	1	27	1.9	2.6	90
1131	42	D	5	.	51	1.0	0.7	27
1132	42	D	6	1	27	1.8	2.6	83
1133	40	A	1	1	60	1.0	0.6	18
1134	40	A	1	.	43	0.3	-1.0	-4
1135	40	A	2	1	62	0.9	0.9	26
1136	40	A	2	.	43	0.3	-0.9	4
1137	40	A	3	1	56	0.9	1.2	36
1138	40	A	3	.	55	0.3	-0.6	7
1139	40	A	4	1	55	0.8	0.2	30
1140	40	B	1	2	30	0.0	0.0	41
1141	40	B	1	.	31	-0.8	-1.1	5
1142	40	B	2	12	30	0.2	0.2	52
1143	40	B	2	.	36	-0.5	-1.9	-10
1144	40	B	3	2	30	0.1	-0.1	47
1145	40	B	3	.	30	-0.5	-1.6	-16
1146	40	B	4	2	30	0.0	-0.2	44
1147	40	B	4	.	30	-0.5	-1.7	-5
1148	40	B	5	2	30	-0.1	-0.2	48
1149	40	B	5	.	30	-0.5	-1.7	2
1150	40	B	6	2	30	-0.1	-0.4	37
1151	40	B	6	.	30	-0.5	-1.8	-8
1152	40	B	7	2	30	0.0	-0.1	42
1153	40	B	7	.	30	-0.6	-1.7	-12
1154	40	B	8	2	15	-0.2	-1.3	47
1155	40	C	1	1	39	0.8	2.2	60
1156	40	C	1	.	79	0.1	-0.4	-1
1157	40	C	2	1	36	0.6	2.2	57
1158	40	C	2	.	62	0.1	-0.4	-11
1159	40	C	3	1	36	0.8	2.6	65
1160	40	C	3	.	65	-0.1	0.6	-5
1161	40	C	4	1	34	1.1	3.5	52
1162	40	D	1	2	30	0.7	2.4	.
1163	40	D	1	.	30	0.6	1.0	11
1164	40	D	2	1	27	1.2	3.0	61
1165	40	D	2	.	64	0.5	0.6	-1
1166	40	D	3	12	30	1.3	4.4	86
1167	40	D	3	.	81	0.5	1.1	1
1168	40	D	4	1	14	1.0	2.1	64
1169	40	D	4	.	30	0.8	1.6	-1
1170	40	D	5	1	20	1.3	3.3	63
1171	40	D	5	.	61	0.5	1.3	-1
1172	40	D	6	1	19	1.3	3.3	65
1173	38	A	1	3	60	0.8	1.9	54
1174	38	A	1	.	17	.	.	8
1175	38	A	2	3	20	.	.	.
1176	38	A	2	.	15	0.9	-0.9	-4

OBS	ID	BOUT	CYCLE	REAS	TIME	DEL_TRE	DEL_MSK	DEL_HR
1177	38	A	3	1	32	1.10	0.9	45
1178	38	A	3	.	28	0.10	-4.2	7
1179	38	A	4	1	51	1.10	1.2	55
1180	38	A	4	.	23	0.40	-3.7	7
1181	38	A	5	1	55	1.00	1.3	54
1182	38	A	5	.	30	0.46	-1.7	3
1183	38	A	6	2	53	0.80	1.2	74
1184	38	B	1	2	31	0.60	2.2	33
1185	38	B	1	.	30	0.50	-0.5	20
1186	38	B	2	2	30	1.20	2.4	77
1187	38	B	2	.	31	0.40	-1.5	22
1188	38	B	3	3	15	0.80	1.3	75
1189	38	B	3	.	51	0.30	-2.0	14
1190	38	B	4	2	30	0.80	1.7	87
1191	38	B	4	.	30	0.60	-1.0	8
1192	38	B	5	3	10	-1.20	2.1	72
1193	38	B	5	.	47	0.40	-1.8	4
1194	38	B	6	2	30	1.00	2.1	87
1195	38	B	6	.	30	0.80	-1.0	9
1196	38	B	7	3	15	1.20	0.8	82
1197	38	C	1	13	28	1.10	2.4	61
1198	38	C	1	.	83	0.30	0.1	14
1199	38	C	2	1	26	1.20	2.3	66
1200	38	C	2	.	104	0.40	-0.6	17
1201	38	C	3	1	19	0.90	2.3	70
1202	38	C	3	.	68	0.20	-0.3	4
1203	38	C	4	12	30	1.40	2.5	74
1204	38	D	1	2	30	0.60	2.5	41
1205	38	D	1	.	32	1.20	2.7	5
1206	38	D	2	3	26	1.20	2.7	67
1207	38	D	2	.	33	0.70	1.6	7
1208	38	D	3	3	18	0.70	3.2	67
1209	38	D	3	.	51	-0.20	1.0	21
1210	38	D	4	13	27	1.70	3.2	103
1211	38	D	4	.	74	0.50	0.6	12
1212	38	D	5	1	18	1.10	2.1	45
1213	38	D	5	.	34	0.70	-0.4	15
1214	38	D	6	2	17	0.90	2.1	68
1215	46	A	1	1	75	0.90	2.2	17
1216	46	A	1	.	44	0.10	-0.9	-18
1217	46	A	2	1	55	0.80	1.7	3
1218	46	A	2	.	39	0.20	-1.4	-18
1219	46	A	3	3	79	0.70	1.4	5
1220	46	A	3	.	98	0.10	-2.9	-18
1221	46	A	4	12	52	0.70	0.8	-1
1222	46	B	1	1	17	0.60	1.5	40
1223	46	B	1	.	41	0.00	-0.3	10
1224	46	B	2	2	30	0.30	1.7	40
1225	46	B	2	.	30	0.10	-0.5	-2
1226	46	B	3	12	30	0.60	1.5	41
1227	46	B	3	.	44	-0.10	-0.8	-2
1228	46	B	4	12	30	0.60	0.6	40
1229	46	B	4	.	95	0.00	2.2	-1
1230	46	B	5	2	30	0.60	0.6	38
1231	46	B	5	.	36	0.00	-0.1	-3
1232	46	B	6	2	16	0.70	0.0	21

OBS	ID	BOUT	CYCLE	REAS	TIME	DEL_TRE	DEL_MSK	DEL_HR
1233	46	C	1	1	32	0.7	2.1	43
1234	46	C	1	.	36	0.1	0.4	11
1235	46	C	2	3	20	0.4	1.6	57
1236	46	C	2	.	36	0.1	0.7	6
1237	46	C	3	1	19	0.9	2.0	37
1238	46	C	3	.	94	0.1	-0.2	-5
1239	46	C	4	1	20	0.6	1.5	33
1240	46	C	4	.	50	0.0	0.0	6
1241	46	C	5	1	19	0.7	1.9	32
1242	46	D	1	12	30	0.5	3.2	49
1243	46	D	1	.	45	0.0	2.1	9
1244	46	D	2	12	30	0.9	3.6	56
1245	46	D	2	.	89	-0.1	0.2	21
1246	46	D	3	12	30	0.8	3.8	61
1247	46	D	3	.	95	-0.1	0.5	22
1248	46	D	4	1	28	0.5	4.0	69
1249	45	A	1	1	64	1.0	2.1	45
1250	45	A	1	.	35	0.3	-1.1	-32
1251	45	A	2	1	69	1.1	1.6	51
1252	45	A	2	.	38	0.3	-1.7	4
1253	45	A	3	1	64	1.1	1.9	64
1254	45	A	3	.	31	0.5	-1.1	-18
1255	45	A	4	1	55	1.0	1.7	68
1256	45	A	4	.	31	0.4	-1.7	-21
1257	45	A	5	2	55	0.7	1.4	58
1258	45	B	1	2	30	0.2	2.5	57
1259	45	B	1	.	30	-0.5	0.1	18
1260	45	B	2	2	30	-0.1	2.3	64
1261	45	B	2	.	30	-1.4	0.2	-4
1262	45	B	3	2	30	-0.3	2.4	71
1263	45	B	3	.	30	-1.7	-1.0	14
1264	45	B	4	2	30	-0.7	2.2	75
1265	45	B	4	.	30	-1.6	-0.5	10
1266	45	B	5	2	30	-0.3	2.5	79
1267	45	B	5	.	30	-1.3	0.3	17
1268	45	B	6	2	30	0.1	2.3	89
1269	45	B	6	.	30	-1.9	-0.5	15
1270	45	B	7	2	30	-0.1	2.7	80
1271	45	B	7	.	30	-1.9	-0.3	16
1272	45	B	8	2	16	-0.7	1.4	80
1273	45	C	1	1	55	2.0	4.1	111
1274	45	C	1	.	122	0.6	0.3	9
1275	45	C	2	1	30	0.6	3.3	83
1276	45	C	2	.	74	1.4	-0.2	-4
1277	45	C	3	1	28	0.7	-0.2	79
1278	45	C	3	.	57	1.4	2.5	8
1279	45	C	4	1	29	0.7	-0.2	80
1280	45	D	1	2	30	0.8	2.6	99
1281	45	D	1	.	30	0.7	1.2	16
1282	45	D	2	1	27	1.5	2.9	116
1283	45	D	2	.	88	0.6	0.0	24
1284	45	D	3	12	30	1.5	3.1	13
1285	45	D	3	.	104	0.7	-0.1	12
1286	45	D	4	2	30	1.5	2.6	10
1287	39	A	1	1	56	0.7	2.7	65
1288	39	A	1	.	37	0.0	-1.5	-5

OBS	ID	BOUT	CYCLE	REAS	TIME	DEL_TRE	DEL_MSK	DEL_HR
1289	39	A	2	1	52	0.7	2.1	48
1290	39	A	2	.	96	0.1	-1.9	-6
1291	39	A	3	1	51	0.6	1.6	42
1292	39	A	3	.	58	0.1	-1.9	-2
1293	39	A	4	1	40	0.6	1.6	53
1294	39	A	4	.	25	0.1	-1.5	1
1295	39	A	5	2	28	0.5	1.0	38
1296	39	B	1	2	30	0.5	3.1	25
1297	39	B	1	.	30	0.3	-0.3	-23
1298	39	B	2	2	30	0.7	2.9	28
1299	39	B	2	.	30	0.2	-0.8	-27
1300	39	B	3	2	30	0.7	2.7	23
1301	39	B	3	.	30	0.1	-1.2	-24
1302	39	B	4	2	30	0.6	2.2	28
1303	39	B	4	.	30	0.2	-0.8	-25
1304	39	B	5	2	30	0.7	2.6	29
1305	39	B	5	.	30	0.4	-1.2	-29
1306	39	B	6	2	30	0.6	2.5	28
1307	39	B	6	.	30	0.2	-1.5	-25
1308	39	B	7	2	30	0.5	2.5	23
1309	39	B	7	.	20	0.3	-1.3	-27
1310	39	B	8	2	30	0.6	1.7	19
1311	39	C	1	1	49	1.7	4.3	-42
1312	39	C	1	.	38	0.7	2.5	0
1313	39	C	2	1	20	1.4	3.9	51
1314	39	C	2	.	27	0.8	2.7	5
1315	39	C	3	1	16	1.4	3.8	36
1316	39	C	3	.	29	0.7	3.0	-2
1317	39	C	4	1	18	1.4	3.8	46
1318	39	C	4	.	29	0.8	3.0	-8
1319	39	C	5	1	17	1.5	3.9	45
1320	39	C	5	.	31	0.6	2.7	-10
1321	39	C	6	1	17	1.4	3.8	40
1322	39	C	6	.	24	0.8	2.7	-1
1323	39	C	7	1	16	1.5	4.0	54
1324	39	C	7	.	42	0.8	2.9	5
1325	39	C	8	1	16	1.6	3.6	61
1326	39	D	1	12	30	1.0	3.3	37
1327	39	D	1	.	48	0.1	0.8	-12
1328	39	D	2	1	22	0.8	2.7	51
1329	39	D	2	.	27	0.1	1.3	-2
1330	39	D	3	1	18	0.8	2.7	39
1331	39	D	3	.	30	-0.1	1.4	-1
1332	39	D	4	1	19	0.9	2.6	46
1333	39	D	4	.	30	0.1	1.2	-6
1334	39	D	5	1	25	0.9	3.1	47
1335	39	D	5	.	43	0.1	0.3	-1
1336	39	D	6	1	22	0.9	1.8	44
1337	39	D	6	.	44	0.1	1.5	-1
1338	39	D	7	1	20	0.8	1.8	42
1339	39	D	7	.	42	0.2	0.3	-5
1340	39	D	8	12	15	0.9	1.7	54
1341	52	A	1	1	95	1.0	2.2	29
1342	52	A	1	.	34	0.2	0.5	-7
1343	52	A	2	1	47	1.0	2.2	19
1344	52	A	2	.	30	0.1	0.0	-15

OBS	ID	BOUT	CYCLE	REAS	TIME	DEL_TRE	DEL_MSK	DEL_HR
1345	52	A	3	1	66	0.8	1.8	13
1346	52	A	3	.	32	0.1	-0.2	-7
1347	52	A	4	1	66	0.8	1.4	28
1348	52	B	1	2	30	0.4	1.9	46
1349	52	B	1	.	34	0.1	0.2	2
1350	52	B	2	2	30	0.6	1.7	42
1351	52	B	2	.	30	0.2	1.4	-1
1352	52	B	3	2	30	0.6	0.9	42
1353	52	B	3	.	33	0.1	-0.1	-12
1354	52	B	4	2	30	0.5	1.0	47
1355	52	B	4	.	30	0.0	-0.7	-13
1356	52	B	5	2	30	0.4	0.4	46
1357	52	B	5	.	30	-0.1	-0.1	-10
1358	52	B	6	2	30	0.3	1.1	45
1359	52	B	6	.	30	-0.1	-0.4	-3
1360	52	B	7	2	30	0.3	-0.3	47
1361	52	C	1	1	42	1.0	2.9	38
1362	52	C	1	.	100	0.2	-0.4	-1
1363	52	C	2	1	20	0.7	2.4	8
1364	52	C	2	.	72	0.2	0.0	-1
1365	52	C	3	1	21	0.8	2.2	41
1366	52	C	3	.	56	0.9	-0.7	-11
1367	52	C	4	1	35	1.1	2.7	61
1368	52	D	1	12	30	0.6	2.1	47
1369	52	D	1	.	115	0.0	0.2	4
1370	52	D	2	1	23	0.7	2.5	9
1371	52	D	2	.	66	0.0	0.2	-8
1372	52	D	3	12	30	0.8	2.3	59
1373	52	D	3	.	85	0.0	0.4	1
1374	52	D	4	1	22	0.7	2.1	37
1375	43	A	1	1	57	0.5	2.8	48
1376	43	A	1	.	60	0.0	1.1	-16
1377	43	A	2	1	61	0.5	2.7	56
1378	43	A	2	.	88	0.0	0.6	-6
1379	43	A	3	13	59	0.5	2.4	63
1380	43	A	3	.	26	0.0	0.9	3
1381	43	A	4	3	20	0.1	2.1	59
1382	43	B	1	2	30	0.7	-0.2	35
1383	43	B	1	.	30	0.4	-1.3	4
1384	43	B	2	12	30	1.0	0.0	38
1385	43	B	2	.	72	0.4	-3.2	-17
1386	43	B	3	2	30	0.8	0.7	44
1387	43	B	3	.	31	0.5	-1.4	4
1388	43	B	4	12	30	1.0	0.2	43
1389	43	B	4	.	104	0.4	-2.0	-3
1390	43	B	5	12	30	1.0	0.7	50
1391	43	C	1	1	46	0.6	3.2	92
1392	43	D	1	2	30	0.7	1.7	74
1393	43	D	1	.	82	0.1	-0.3	1
1394	43	D	2	1	16	0.5	1.9	64
1395	30	A	1	1	56	0.5	1.5	9
1396	30	A	1	.	33	0.0	-0.8	-13
1397	30	A	2	1	56	0.7	1.0	9
1398	30	A	2	.	46	-0.1	-1.4	-17
1399	30	A	3	1	49	0.5	0.7	12
1400	30	A	3	.	36	-0.1	-1.1	-13

OBS	ID	BOUT	CYCLE	REAS	TIME	DEL_TRE	DEL_MSK	DEL_HR
1401	30	A	4	1	76	0.5	1.4	50
1402	30	A	4	.	32	-0.1	-2.1	-3
1403	30	A	5	2	35	0.2	0.0	24
1404	30	B	1	2	30	0.6	2.2	40
1405	30	B	1	.	30	0.2	0.0	1
1406	30	B	2	2	30	0.4	1.6	34
1407	30	B	2	.	30	0.3	-1.2	2
1408	30	B	3	2	30	0.5	1.3	26
1409	30	B	3	.	30	0.2	-1.1	8
1410	30	B	4	2	30	0.6	1.1	36
1411	30	B	4	.	30	0.3	-0.8	2
1412	30	B	5	2	30	0.6	1.9	38
1413	30	B	5	.	30	0.4	-0.2	6
1414	30	B	6	2	30	0.5	1.4	34
1415	30	B	6	.	30	0.2	-0.6	-1
1416	30	B	7	2	30	0.5	1.1	40
1417	30	C	1	1	38	0.8	2.4	106
1418	30	C	1	.	29	-0.1	0.5	6
1419	30	C	2	1	48	1.2	1.9	95
1420	30	C	2	.	41	0.1	-0.3	17
1421	30	C	3	1	48	0.9	1.1	73
1422	30	C	3	.	41	0.2	0.1	14
1423	30	C	4	1	33	0.9	2.1	70
1424	30	C	4	.	33	0.2	0.0	7
1425	30	C	5	1	29	1.0	1.9	82
1426	30	C	5	.	24	0.1	0.4	25
1427	30	C	6	1	28	0.9	2.0	83
1428	30	D	1	2	30	0.8	0.4	59
1429	30	D	1	.	30	0.2	-1.9	-4
1430	30	D	2	12	30	1.3	0.9	74
1431	30	D	2	.	48	0.3	-1.8	0
1432	30	D	3	1	25	1.1	-0.3	74
1433	30	D	3	.	37	0.2	-2.6	2
1434	30	D	4	1	26	1.1	-0.7	67
1435	30	D	4	.	46	0.5	-1.5	10
1436	30	D	5	1	22	1.0	0.5	90
1437	30	D	5	.	44	0.5	-2.5	5
1438	30	D	6	1	20	1.0	-0.6	92
1439	30	D	6	.	46	0.4	-2.4	4
1440	30	D	7	1	22	1.0	-0.3	76
1441	32	A	1	1	76	0.6	2.5	32
1442	32	A	1	.	81	0.1	-1.5	-15
1443	32	A	2	1	78	0.6	2.2	21
1444	32	A	2	.	57	0.1	-0.7	-8
1445	32	A	3	1	72	0.6	2.1	27
1446	32	A	3	.	39	0.1	-1.1	-4
1447	32	A	4	2	38	0.2	1.8	26
1448	32	B	1	2	30	0.4	2.5	39
1449	32	B	1	.	30	-0.1	0.1	-7
1450	32	B	2	2	30	0.5	2.0	43
1451	32	B	2	.	30	0.3	-0.9	-2
1452	32	B	3	2	30	0.5	2.4	40
1453	32	B	3	.	30	0.2	-0.4	8
1454	32	B	4	2	30	0.3	1.8	.
1455	32	B	4	.	30	0.0	-1.1	11
1456	32	B	5	2	30	0.4	1.6	33

OBS	ID	BOUT	CYCLE	REAS	TIME	DEL_TRE	DEL_MSK	DEL_HR
1457	32	B	5	.	30	0.4	-1.8	11
1458	32	B	6	2	30	0.2	0.8	20
1459	32	B	6	.	30	-0.1	-1.0	-4
1460	32	B	7	2	30	0.1	1.0	8
1461	32	C	1	1	49	1.0	3.6	55
1462	32	C	1	.	85	0.4	0.6	-5
1463	32	C	2	1	37	1.0	3.9	72
1464	32	C	2	.	65	0.4	1.1	-2
1465	32	C	3	1	45	1.1	3.7	66
1466	32	C	3	.	82	0.4	1.0	-2
1467	32	C	4	3	33	0.8	3.5	63
1468	32	D	1	2	30	0.5	2.6	57
1469	32	D	1	.	30	0.4	1.2	4
1470	32	D	2	1	17	0.9	2.9	46
1471	32	D	2	.	125	0.2	1.1	0
1472	32	D	3	1	24	1.0	3.0	61
1473	32	D	3	.	115	0.3	-1.3	1
1474	32	D	4	12	30	0.9	3.8	.
1475	22	A	1	1	78	0.8	2.2	27
1476	22	A	1	.	35	0.2	-0.9	-26
1477	22	A	2	1	55	0.8	2.3	34
1478	22	A	2	.	37	0.1	-1.1	-23
1479	22	A	3	1	53	0.7	2.2	36
1480	22	A	3	.	31	0.2	-0.6	-15
1481	22	A	4	1	45	0.8	2.3	26
1482	22	A	4	.	33	0.2	-1.9	1
1483	22	A	5	1	55	0.9	1.3	52
1484	22	B	1	12	30	0.5	2.5	55
1485	22	B	1	.	52	0.1	0.3	22
1486	22	B	2	12	30	0.6	3.4	46
1487	22	B	2	.	59	0.0	0.3	-10
1488	22	B	3	12	30	0.7	2.6	38
1489	22	B	3	.	63	0.1	0.1	-4
1490	22	B	4	2	30	0.6	2.1	46
1491	22	B	4	.	52	0.0	-0.2	7
1492	22	B	5	2	30	0.5	2.3	44
1493	22	B	5	.	30	0.3	0.3	-23
1494	22	B	6	1	16	0.6	1.8	51
1495	22	C	1	1	47	0.8	2.5	70
1496	22	C	1	.	61	0.1	-0.2	11
1497	22	C	2	1	35	0.9	2.1	62
1498	22	C	2	.	60	0.1	-1.9	-38
1499	22	C	3	1	35	1.0	2.2	62
1500	22	C	3	.	41	0.0	-1.4	7
1501	22	C	4	1	36	1.3	1.7	78
1502	22	C	4	.	58	0.1	-0.4	17
1503	22	C	5	1	26	0.8	1.2	65
1504	22	D	1	12	30	0.7	2.9	48
1505	22	D	1	.	70	0.1	-0.1	-11
1506	22	D	2	12	30	0.9	1.9	54
1507	22	D	2	.	77	0.1	-0.6	-10
1508	22	D	3	12	30	1.0	2.4	55
1509	22	D	3	.	84	0.0	-1.4	-1
1510	22	D	4	3	17	0.5	2.0	56
1511	53	A	1	2	30	0.4	1.4	48
1512	53	A	1	.	30	-0.3	0.4	13

OBS	ID	BOUT	CYCLE	REAS	TIME	DEL_TRE	DEL_MSK	DEL_HR
1513	53	A	2	2	30	0.4	1.5	48
1514	53	A	2	.	30	-0.2	0.3	12
1515	53	A	3	2	30	0.4	0.7	50
1516	53	A	3	.	30	-0.1	-0.2	1
1517	53	A	4	2	30	0.3	0.6	47
1518	53	A	4	.	30	-0.2	0.0	3
1519	53	A	5	2	30	0.3	0.8	52
1520	53	A	5	.	49	-0.5	0.1	10
1521	53	A	6	2	30	0.4	1.5	48
1522	53	A	6	.	30	-0.4	-0.2	5
1523	53	A	7	2	30	0.4	0.6	51
1524	53	B	1	12	30	0.5	1.9	18
1525	53	B	1	.	30	-0.2	0.9	-15
1526	53	B	2	12	30	0.5	1.6	29
1527	53	B	2	.	30	-0.3	0.4	-20
1528	53	B	3	2	30	0.4	0.8	33
1529	53	B	3	.	30	-0.3	-0.1	-13
1530	53	B	4	2	30	0.3	0.9	40
1531	53	B	4	.	30	-0.2	-0.6	-12
1532	53	B	5	2	30	0.3	0.2	36
1533	53	B	5	.	30	-0.2	-0.4	-3
1534	53	B	6	12	30	0.4	1.1	45
1535	53	B	6	.	30	-0.1	0.1	-2
1536	53	B	7	12	30	0.6	1.7	45
1537	53	B	7	.	30	-0.1	0.5	-3
1538	53	B	8	12	30	0.4	0.5	36
1539	53	C	1	1	45	0.9	3.6	71
1540	53	C	1	.	36	0.6	2.7	11
1541	53	C	2	1	25	0.9	3.0	54
1542	53	C	2	.	26	0.0	1.2	1
1543	53	C	3	1	30	0.9	1.7	53
1544	53	C	3	.	33	0.2	1.4	2
1545	53	C	4	1	24	0.8	2.3	64
1546	53	C	4	.	38	0.0	0.3	6
1547	53	C	5	1	26	0.9	2.8	71
1548	53	C	5	.	32	0.3	-0.1	14
1549	53	C	6	1	17	0.7	1.8	57
1550	53	C	6	.	38	0.3	0.4	17
1551	53	C	7	1	17	1.0	2.2	64
1552	53	C	7	.	33	0.2	1.2	11
1553	53	C	8	3	12	0.6	2.0	57
1554	53	D	1	2	30	0.4	2.5	.
1555	53	D	1	.	36	0.3	0.9	.
1556	53	D	2	12	31	1.3	3.1	44
1557	53	D	2	.	31	0.4	1.4	22
1558	53	D	3	1	27	1.4	3.1	49
1559	53	D	3	.	31	0.6	1.0	16
1560	53	D	4	1	19	1.2	3.0	61
1561	53	D	4	.	33	0.6	1.0	20
1562	53	D	5	1	15	1.2	2.7	58
1563	53	D	5	.	35	0.6	1.1	13
1564	53	D	6	1	14	1.1	3.1	59
1565	53	D	6	.	42	0.6	1.0	16
1566	53	D	7	13	18	1.1	2.8	65
1567	53	D	7	.	30	0.5	1.2	10
1568	53	D	8	13	19	1.1	3.1	50

OBS	ID	BOUT	CYCLE	REAS	TIME	DEL_TRE	DEL_MSK	DEL_HR
1569	16	A	1	1	64	0.8	0.6	46
1570	16	A	1	.	57	0.1	-2.2	-4
1571	16	A	2	1	68	1.0	.	64
1572	16	A	2	.	36	0.2	-1.6	5
1573	16	A	3	1	37	0.8	1.5	60
1574	16	A	3	.	26	0.1	-1.7	8
1575	16	A	4	1	43	0.9	1.3	40
1576	16	A	4	.	31	0.2	-1.0	6
1577	16	A	5	1	50	0.7	1.3	56
1578	16	B	1	12	30	0.6	2.6	40
1579	16	B	1	.	33	0.1	0.0	-4
1580	16	B	2	12	30	0.7	2.4	43
1581	16	B	2	.	59	.	-0.9	.
1582	16	B	3	12	30	0.6	2.1	46
1583	16	B	3	.	55	0.1	-1.0	4
1584	16	B	4	2	30	0.6	2.0	43
1585	16	B	4	.	30	0.2	1.3	1
1586	16	B	5	12	32	0.9	1.5	45
1587	16	B	5	.	46	0.1	0.6	-13
1588	16	B	6	2	15	0.4	0.7	37
1589	16	C	1	1	45	0.6	1.3	50
1590	16	C	1	.	75	-0.1	-0.4	8
1591	16	C	2	1	38	0.9	3.1	50
1592	16	C	2	.	142	-0.2	0.1	7
1593	16	C	3	1	30	0.9	3.3	57
1594	16	D	1	12	30	1.1	3.7	70
1595	16	D	1	.	68	0.4	0.0	.
1596	16	D	2	12	30	1.3	4.2	83
1597	16	D	2	.	80	0.3	0.1	8
1598	16	D	3	1	17	1.1	3.7	71
1599	16	D	3	.	54	0.2	0.9	7
1600	16	D	4	1	19	1.3	-1.5	77
1601	16	D	4	.	51	0.3	1.9	5
1602	16	D	5	1	21	1.8	1.6	77
1603	9	A	1	1	39	1.1	2.6	.
1604	9	A	1	.	56	0.5	0.2	1
1605	9	A	2	1	59	1.1	2.7	29
1606	9	A	2	.	54	0.4	0.6	-13
1607	9	A	3	1	60	1.0	1.9	54
1608	9	A	3	.	45	0.5	-0.2	-9
1609	9	A	4	23	55	1.1	2.4	.
1610	9	B	1	2	30	0.7	2.5	41
1611	9	B	1	.	30	0.3	0.2	8
1612	9	B	2	1	17	0.8	1.9	42
1613	9	B	2	.	48	0.0	0.9	4
1614	9	B	3	12	30	0.6	1.5	42
1615	9	B	3	.	51	0.1	-0.1	-7
1616	9	B	4	2	30	0.5	2.5	43
1617	9	B	4	.	30	0.3	0.0	-15
1618	9	B	5	12	30	0.8	4.0	60
1619	9	B	5	.	75	0.1	-0.3	-12
1620	9	B	6	12	30	0.8	2.6	67
1621	9	C	1	1	46	1.5	3.3	59
1622	9	C	1	.	80	0.5	0.7	-2
1623	9	C	2	1	33	1.4	3.4	73
1624	9	C	2	.	119	0.4	0.9	11

OBS	ID	BOUT	CYCLE	REAS	TIME	DEL_TRE	DEL_MSK	DEL_HR
1625	9	C	3	1	37	1.7	3.1	73
1626	9	D	1	2	30	0.8	2.6	.
1627	9	D	1	.	30	0.1	1.0	55
1628	9	D	2	1	18	1.5	3.2	45
1629	9	D	2	.	138	0.2	-0.8	-21
1630	9	D	3	12	30	1.2	1.9	67
1631	9	D	3	.	166	0.2	0.5	6
1632	9	D	4	1	30	1.2	3.0	62
1633	26	A	1	1	96	1.1	2.8	31
1634	26	A	1	.	28	0.2	-1.2	-2
1635	26	A	2	3	100	0.6	1.7	69
1636	26	A	2	.	37	-0.1	-1.6	1
1637	26	A	3	2	89	0.7	0.1	47
1638	26	B	1	2	30	0.2	0.7	45
1639	26	B	1	.	30	0.0	-1.7	-5
1640	26	B	2	2	30	0.3	0.3	37
1641	26	B	2	.	30	-0.1	-2.2	-14
1642	26	B	3	2	30	0.1	-0.1	41
1643	26	B	3	.	30	-0.3	-2.8	-13
1644	26	B	4	2	30	0.1	-0.1	40
1645	26	B	4	.	30	-0.2	-2.2	-9
1646	26	B	5	2	30	0.2	0.2	36
1647	26	B	5	.	30	0.0	-1.8	-11
1648	26	B	6	2	30	0.3	0.1	34
1649	26	B	6	.	30	0.0	-2.2	-11
1650	26	B	7	2	30	0.2	0.1	34
1651	26	B	7	.	30	0.0	-1.6	-8
1652	26	B	8	12	30	0.5	0.4	48
1653	26	C	1	1	55	1.7	2.7	46
1654	26	C	1	.	50	0.5	-0.3	1
1655	26	C	2	1	40	1.2	2.2	63
1656	26	C	2	.	45	0.5	-0.1	5
1657	26	C	3	1	40	1.2	2.1	65
1658	26	C	3	.	36	0.5	-0.1	7
1659	26	C	4	1	36	1.2	2.1	61
1660	26	C	4	.	49	0.5	0.3	7
1661	26	C	5	1	32	1.3	2.4	62
1662	26	D	1	2	30	0.5	2.3	53
1663	26	D	1	.	30	0.2	0.8	-10
1664	26	D	2	1	22	0.7	2.4	66
1665	26	D	2	.	38	0.0	0.3	-7
1666	26	D	3	12	30	0.8	2.4	67
1667	26	D	3	.	38	0.0	0.4	-2
1668	26	D	4	1	25	0.8	2.1	59
1669	26	D	4	.	44	0.0	-0.2	-3
1670	26	D	5	12	30	0.8	2.3	68
1671	26	D	5	.	65	0.1	-0.2	-1
1672	26	D	6	1	23	0.7	2.0	66
1673	36	A	1	3	55	0.8	2.2	54
1674	36	A	1	.	41	0.0	-0.7	9
1675	36	A	2	3	60	0.7	1.1	74
1676	36	A	2	.	45	0.0	1.0	3
1677	36	A	3	3	55	0.5	1.6	56
1678	36	A	3	.	77	-0.1	-1.7	3
1679	36	A	4	3	72	0.6	1.7	62
1680	36	B	1	1	20	0.5	2.4	55

OBS	ID	BOUT	CYCLE	REAS	TIME	DEL_TRE	DEL_MSK	DEL_HR
1681	36	B	1	.	47	0.0	1.4	18
1682	36	B	2	1	18	0.7	2.7	50
1683	36	B	2	.	48	-0.1	-1.0	-11
1684	36	B	3	1	18	0.5	1.3	31
1685	36	B	3	.	47	-0.1	0.7	-14
1686	36	B	4	12	30	0.7	2.0	61
1687	36	B	4	.	50	-0.1	-0.3	-18
1688	36	B	5	1	23	0.5	1.7	47
1689	36	B	5	.	30	-0.1	0.1	-11
1690	36	B	6	1	25	0.5	1.9	38
1691	36	B	6	.	33	-0.1	-0.7	-9
1692	36	B	7	1	21	0.5	1.7	36
1693	36	C	1	1	10	0.4	0.6	59
1694	36	C	1	.	64	-0.3	-1.1	5
1695	36	C	2	1	16	0.5	0.7	54
1696	36	C	2	.	46	-0.2	-1.2	-14
1697	36	C	3	1	18	0.5	0.7	59
1698	36	C	3	.	44	-0.2	-1.1	-4
1699	36	C	4	1	16	0.5	0.4	65
1700	36	C	4	.	55	-0.4	1.8	5
1701	36	C	5	1	17	0.5	0.4	60
1702	36	C	5	.	47	-0.3	-1.7	-27
1703	36	C	6	1	28	0.6	0.7	38
1704	36	C	6	.	42	-0.3	-1.5	5
1705	36	C	7	1	16	0.4	0.5	62
1706	36	D	1	1	21	0.6	2.1	85
1707	36	D	1	.	82	0.0	-0.6	-15
1708	36	D	2	1	21	0.6	2.8	91
1709	36	D	2	.	49	0.0	-0.2	-4
1710	36	D	3	1	20	0.7	2.1	94
1711	36	D	3	.	32	-0.2	0.6	7
1712	36	D	4	1	17	1.1	2.2	70
1713	36	D	4	.	41	-0.2	0.0	12
1714	36	D	5	1	14	0.9	2.0	97
1715	36	D	5	.	30	-0.1	0.5	27
1716	36	D	6	2	10	0.8	1.8	103
1717	12	A	1	1	97	1.5	2.5	49
1718	12	A	1	.	96	0.9	-1.5	-2
1719	12	A	2	1	44	1.5	1.4	61
1720	12	A	2	.	35	0.9	0.0	4
1721	12	A	3	1	40	1.6	2.0	61
1722	12	A	3	.	39	0.8	0.1	10
1723	12	A	4	3	33	1.4	1.2	61
1724	12	B	1	12	30	0.7	1.5	68
1725	12	B	1	.	33	0.0	0.4	7
1726	12	B	2	12	30	0.7	1.6	67
1727	12	B	2	.	30	-0.5	-1.0	3
1728	12	B	3	12	30	0.7	1.7	61
1729	12	B	3	.	30	-0.8	-1.3	-3
1730	12	B	4	12	30	0.6	1.1	43
1731	12	B	4	.	30	-0.1	-1.2	-6
1732	12	B	5	1	15	0.7	0.5	64
1733	12	B	5	.	30	-0.4	-1.0	20
1734	12	B	6	2	30	0.5	1.2	68
1735	12	C	1	1	47	1.1	2.0	53
1736	12	C	1	.	76	0.2	-0.3	-1

OBS	ID	BOUT	CYCLE	REAS	TIME	DEL_TRE	DEL_MSK	DEL_HR
1737	12	C	2	3	27	0.2	3.4	42
1738	12	D	1	2	30	0.9	3.3	47
1739	12	D	1	.	30	0.3	2.6	13
1740	12	D	2	12	30	1.8	4.5	59
1741	12	D	2	.	73	0.7	2.5	10
1742	12	D	3	1	19	1.3	4.0	61

PUBLICATIONS TO DATE:

None. This work has only recently been completed and was only a two year project.

PLANNED PUBLICATIONS:

The report submitted hereby will likely be presented and published as a single manuscript within the next 12-18 months.

Additional presentations and publications are planned in the following areas based upon data derived from this investigation:

Role of peri-natal heat exposure on thermal tolerance in humans.

Role of ethnicity and heat tolerance in protective clothing.