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VECTORCARDIOGRAPHIC ANALYSIS BY DIGITAL COMPUTER, SELECTED RESULTS

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Vectorcardiographic Analysis by Digital Computer, Selected Results

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1. Introduction

Instrumentation, recording devices and digital computers now may be combined to obtain detailed statistical measures of physiologic phenomena. Computers make it possible to study several models of a system in depth as well as breadth. This report is concerned with methods employed in a detailed statistical study of some 600 vectorcardiograms from different "normal" individuals which were recorded on analog magnetic tape using two different orthogonal lead systems (Helm, Frank) giving a total of 1200 cardiograms. A "normal" individual is defined as one in which no abnormal heart condition was detected by either medical history or physical examination. One heartbeat in a train of 15 to 20 was selected for digitization. An average of 1.2 seconds worth of data was digitized from each of the three vector leads simultaneously at a rate of 1000 samples per second for each lead giving a total of over 4.10^6 values.

Statistical models by sex and lead system of the P wave and QRS complex (at 1 millisecond intervals) and T wave (normalized to 60 points in time) were obtained for 43 age groups from age 19 to 61 in rectangular coordinates, polar coordinates and ellipsoidal fit (F-test) coordinates. Several programs were written to perform the analyses on an IBM 7090. Two of the programs used 300000+ words of disk storage to collect the necessary statistics. Various aspects of this study are presented below.

2. Physiologic Background

The dipole theory and the vector concept have been valuable tools in understanding the relation between surface point potentials and simultaneous events occurring in the cardiac generator. In the dipole theory a current is envisioned as flowing from the resting

electropositive to the contracting electronegative portion of the myocardial fiber. These sources and sinks are considered to be the elementary dipole generators. The representation of the resultant cardiac dipole as a directed magnitude is the basis of the vector concept in electrocardiography. Millions of microscopic dipoles are activated in a prescribed sequence with each contraction of the heart muscle. In the atrium the sequence is determined by a concentric spread around the sinus node; in the ventricle a special conducting system is responsible for the spread of the activation wave front. Our main body of clinical knowledge of electrocardiographic signals is based on the integrated strength over the entire heart as measured at the body surface as a single equivalent dipole at an instant in time.

Orthogonal lead systems have been developed which appropriately weight the leads such that dipoles originating in different regions of the heart have their point of origin corresponding to the origin of the lead system. The transformation of the heart vector to the zero point of the lead reference frame is a function of the lead vectors. A system is said to be orthogonal if the lead vectors can be considered to be mutually perpendicular unit vectors for all regions of the heart. The goal of the volume conductor torso studies of Schmidt [10] and Frank [4] was to establish lead systems which made this transformation with reasonable independence of dipole position within the heart. We are aware that a dipole representation is at best a crude approximation and does not account for all potential on the body surface and that a multipole analysis with additional leads may improve the degree of approximation.

The introduction of the cathode-ray oscilloscope offered a simple analogue conversion of scalar into vector representation and greatly helped the visual display of the dipole vector. But at the same time this method obscured the important time function display. The detail of these shortcomings were described previously [5], [6]. Simonson [11] points out that a truly quanitative vectoranalysis would have

to abandon planar loop projections in favor of time based orthogonal leads. We are in full agreement with this. The question arises how to analyse the orthogonal leads. The display of the instantaneous summation dipole vector as a function of time combines the advantage of vector representation with the advantage of time display as used in the scalar ECG. We refer to this method as the temperospatial analysis. The instantaneous vector is here given by its spherical coordinates which consist of 2 angles and the the vector magnitude. The spherical representation as a function of time allows an immediate insight into the cardiac vector position at a given instant. In order to utilize the experience and tradition of electrocardiography we describe the vector in terms of Einhoven's angle alpha, which is the projection of the heart vector into the frontal plane, and the angle tilt which is the angle between the heart vector and the frontal plane. Projecting a terrestial sphere into the center of the chest, this means that if the pole axis is made to coincide with the anatomical antero-posterior axis and the equatorial plane to coincide with the frontal plane, alpha will be equal to longitude and tilt equal to latitude. The spatial magnitude is the absolute vector magnitude as opposed to the magnitude in a loop projection which is dependent upon the plane of projection.

The frequency distribution of the spherical coordinates of the QRS complex in normal individuals was previously demonstrated [6] by scattergrams. This normal distribution range was then used as a background mask against which abnormal individuals were studied. The normal range served as a guide to determine abnormalities. The coordinate system functions in this case as an enveloping surface for a given instant of time. The number of points outside the normal range was counted for the normal and the abnormal population and the 95% range was used as the separation line which means that the criteria were made such that only 5% of the normal population would be inside the enveloping surface. The smallness of the sample size of our original normal study and its limitation to the QRS complex were felt to be a definite shortcoming. For this reason the following study was undertaken which comprises normal individuals between the age of 15 and 60 in which one complete cardiac cycle from the beginning of P to the

end of T was analyzed at one millisecond intervals for each individual. All individuals were studied in the Frank lead system and Helm modification of Frank lead system.

3. Analog to Digital Conversion

Four channels of the analog source tape are used in this study, three as data channels and the fourth to supply a two-state trigger signal for the analog to digital converter (ADC). Signals on the 3-data channels are converted to digital form only when the associated trigger channel is at the one millivolt level. When it is at the zero volt level, no digitization takes place. The duration of the manually placed trigger signal is not less than one heartbeat but may be somewhat longer than one beat. A trigger signal was also recorded on a representative part of the associated calibration signals so that both selected parts of cardiograms and calibration curves were digitized.

The ADC system used had Texas Instruments DC voltmeters and buffers with support electronics by Lockheed Missile and Space Company. A CEC tape recorder driven at 15in/sec. served as the input source to the ADC. Each of the three data tracks was sampled at 1000 samples/sec. with a 25 microsecond delay from track to track of a triple. Each converted value has a resolution of 1 part in 2047. The digital output was written on 729-IV compatible tape at a density of 200 characters/in. in a buffered mode so that no data was lost when end of record gaps were written.

We feel that analog recording and subsequent A/D conversion is the weakest link in the processing associated with a study of this type. Subtle problems arise which may go unnoticed unless one is watching for such trouble. Nonlinearity within the dynamic range, component irregularities, and clock rate variations are possibilities which may go unnoticed unless frequent calibration curves of known characteristics are interspersed with the data. Even when calibration curves are included frequently for each data channel, it often

is desirable to have a record of all control changes and knob twiddling which affect the input signals at recording time.

4. Computing Requirements

The computing requirements of a study of this type may be divided into three phases: (i) data editing and reduction; (ii) statistical calculations; (iii) graphic and tabular presentation of results. The actual method of data recording has considerable influence on phase (i) requirements. Furthermore, by its very nature, phase (i) is the least well defined initially, so that the specifications tend to evolve as the project progresses. A sketch of two different methods of data recording will indicate the differences involved.

One method [5] which involves a great deal of human editing and data preparation gives rise to only minor phase (ii) computing requirements. In this method the signals are recorded on film. An appropriate set of data is selected for digitization on a Benson-Lehner Oscar with the output being punched on cards. The punched data then are processed on a digital computer. Each step in this process allows for unlimited human intervention. Special cases are observed as they occur and adjustments may be made on the spot to modify errant data or to modify errant procedures. This method of approach gives rise to fairly good control to the over-all data processing requirements but is rather limited as to the quantity of data that can be processed.

Another approach to the problem is to record the signals on magnetic tape, then digitize the tape by means of an analog to digital converter and finally process the resulting digital tape on a digital computer. This method of processing often requires considerable preparations in order to achieve the same type of control over the initial processing as the previous method. For example, in order to "see" the data one either has to print out the digital values or to plot them.

A plot is much easier to spot check but it takes considerably more programming effort than printing. Subtle problems arise in A/D conversion which may not be caught unless one is watching for such trouble. Once the processing system is well defined and checked, the manual recording should be reduced to a minimum. It should be pointed out that it is impossible to plan in advance for all possible contingencies, hence the check points normally fall into two different classifications, those which are planned as part of the over-all system design and those which arise because of some unforeseen situation.

The moral to the comparison between the two methods is that control is a natural part of the first method, it is obtained as a by product of the human manipulation of the data. The latter case is much better suited to handle large volumes of data but control at each step of the process often requires as much effort as the solution process itself. It is interesting to note that if we had used cards instead of tape and placed 9 values (3 triples) on a card we would have generated 47,000 cards using 120 msec of data for each of P and QRS and 60 values from T or we would have used approximately 560,000 cards if we had placed each entire cardiogram on cards.

A flow chart giving the data processing sequence appears in Appendix I. Each lead of a cardiogram was scaled by its associated calibration value on an IBM 7090 and a tape was prepared for a CalComp incremental plotter. Each cardiogram was plotted (with appropriate label and axes) on a scale of 18 inches for each second of data on the horizaontal axis and of 2.5 inches per millivolt on the vertical scale. Several types of smoothing were investigated including 5, 7, and 9 point linear and parabolic moving window smoothing (see Appendix II) and 3 and 5 point linear moving window smoothing. We decided to use 7 point linear moving window smoothing for the plots (the cardiograms were retained in their unsmoothed form for the statistical calculations). The plotted cardiograms were used for onset determination and as a permanent record for the patient folder.

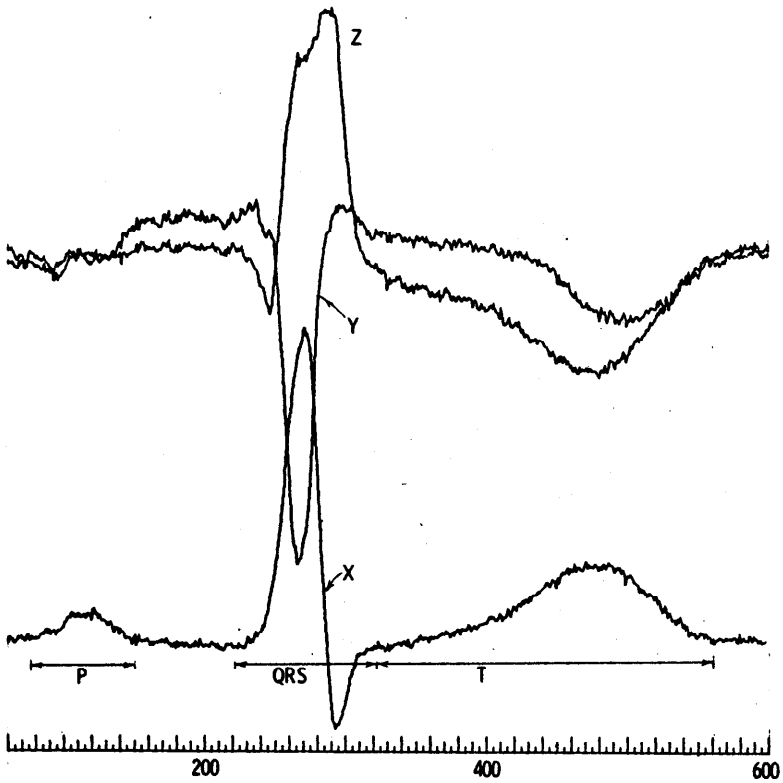


Fig. 1 - Vectorcardiogram of a Single Heartbeat.

The cardiograms were separated into four categories by sex and recording lead system and each category was processed separately. Statistics were gathered by age at one year increments for ages 15 to 65 for the P wave and QRS complex at one millisecond intervals and for the T wave normalized to 60 equal parts in time. A total of 6000 x 51 words of disk storage were used to gather the initial statistics. On a subsequent pass the information for age groups up to four years younger and older was combined to give the tables presented in the appendices of this report. Thus statistics from our age 19 consisted of values from ages 15 to 23, etc. Table 1 gives the sample size and average age for each age of the Frank study.

TABLE 1 SAMPLE SIZE AND AVERAGE AGE FOR QRS AND T WAVES (FRANK LEAD SYSTEM)

Window age	Sample size		Average age	
	male	female	male	female
19	82	100	18.7	18.5
20	78	94	19.4	19.2
21	72	83	20.1	20.3
22	71	78	20.6	20.6
23	54	65	21.8	21.8
24	45	55	23.2	22.8
25	43	40	24.8	24.3
26	40	43	25.3	25.8
27	36	43	26.9	26.6
28	40	38	28.5	28.0
29	38	34	29.5	28.8
30	41	34	30.5	30.4
31	41	44	31.3	31.6
32	43	43	32.0	32.6
33	48	47	33.2	33.5
34	50	50	34.7	34.1
35	56	47	35.3	35.4
36	59	49	36.3	36.3
37	54	58	37.4	37.6
38	58	63	38.2	38.1
39	57	63	39.0	39.0
40	58	56	39.7	40.1
41	60	60	40.5	51.0
42	58	61	41.7	42.2
43	53	61	42.8	42.9
44	50	62	43.7	43.7
45	48	60	45.0	44.4
46	50	52	45.9	45.8
47	48	52	47.0	46.9
48	47	49	47.9	47.8
49	48	49	48.9	48.4
50	49	47	50.1	49.7
51	49	44	51.4	51.0
52	48	40	52.0	51.6
53	45	37	52.5	52.6
54	39	34	53.1	53.2
55	35	30	53.9	53.9
56	30	25	54.4	54.8
57	26	22	54.8	55.2
58	20	18	55.3	55.7
59	13	12	56.0	56.6
60	6	7	57.2	57.7

This pass made use of 43 x 10000 words of disk storage to accumulate the statistics. Means and standard deviations in rectangular and spherical coordinates and 6 elements of a covariance matrix were generated for each point in time. A total of 180 points in time was reserved for both P and QRS; however, for the normal study it was seldom that more than 125 points in time were required.

The goals of this study were two fold. First was to obtain precise statistical information on the electrical activity of the normal heart by age, sex and lead system. Second was to have the data in a machine usable form which would allow us to classify hearts initially into normal and abnormal groups and finally into normal and abnormal groups of known type of abnormality. We plan to implement a system which will allow us to carry out the classification on a computer. After the classification has been confirmed, we will then update the statistics for the appropriate classification with that individual's data. In such an undertaking it is important that all data collection devices used have the same characteristics, that set procedures are used to check out the recording gear, to enter calibration data and to record the signals. Foolproof onset/offset determination programs must be employed and more effort must be expended on filtering programs and classification algorithms.

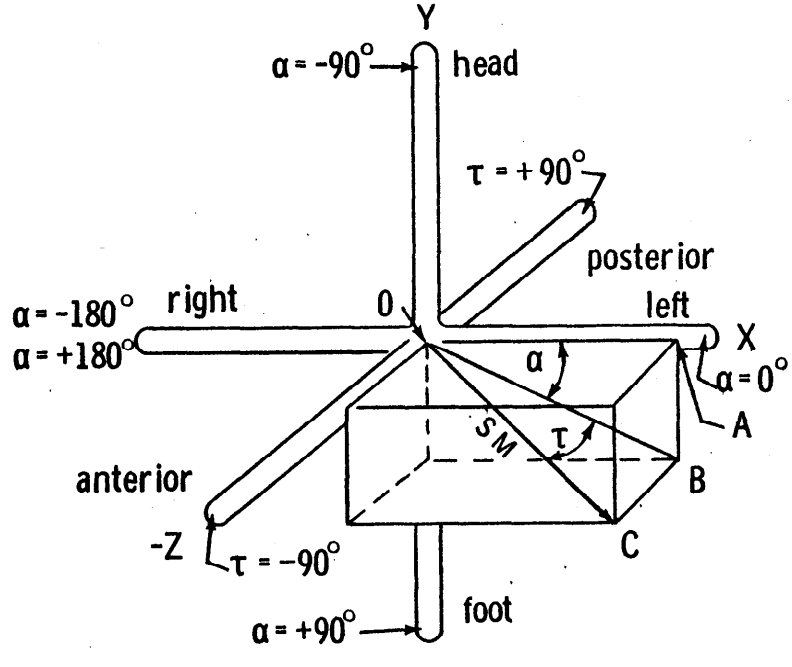


Fig. 2 - Coordinate Systems

Figure 2 depicts the left-handed coordinate system which has been adopted in vectorcardiography. Let $x = \overline{OA}$, $y = \overline{AB}$, $z = \overline{BC}$. Traditional polar angles in degrees are defined as

$$(1)\quad \begin{cases} r = \sqrt{x^2 + y^2 + z^2}\ , \\ \tau = \dfrac{180}{\pi} \arcsin(z/r)\ , \\ \alpha = \begin{cases} 0 & , x > 0,\ y = 0\ , \\ 180 & , x < 0,\ y = 0\ , \\ -90\ \operatorname{sign}(y) & , x = 0,\ y \neq 0\ , \\ \dfrac{-180}{\pi} \arctan(y/x) & , x > 0,\ y \neq 0\ , \\ -\left[180 - \dfrac{180}{\pi} \left| \arctan(y/x) \right|\right] \operatorname{sign}(y) & , x < 0,\ y \neq 0\ . \end{cases} \end{cases}$$

With these definitions alpha has the range $-180^\circ < \alpha \leq 180^\circ$ and tilt has the range $-90^\circ \leq \tau \leq 90^\circ$. Thus the angle α has a discontinuity along the negative x-axis with a jump of 360° as one goes from positive y values to negative y values. The definition of α requires that the mean $\bar{\alpha}$ be computed before σ_α can be computed. This requires two complete passes of the input data.

In order that individuals with large spatial magnitudes do not have a disproportionate effect on the mean angles $\bar{\alpha}$ and $\bar{\tau}$, these means are computed from unit vectors as follows. Let $u = \Sigma(x_i/r_i)$, $v = \Sigma(y_i/r_i)$, $w = \Sigma(z_i/r_i)$ then the spherical mean values are defined by

$$(2)\quad \begin{cases} \tau = \dfrac{180}{\pi} \arcsin(w/p)\ , \\ \bar{\alpha} = \begin{cases} \dfrac{-180}{\pi} \arctan(v/u)\ , & u > 0,\ v \neq 0\ , \\ \text{etc.} \end{cases} \end{cases}$$

where $p = \sqrt{u^2 + v^2 + w^2}$.

Standard deviations for all coordinates have textbook definitions except α which for a given point in time has the definition

$$(3) \qquad \sigma_\alpha = \sqrt{\sum_k (\zeta_k)^2/N} \quad ,$$

where

$$(4) \qquad \zeta_k = \begin{cases} 360 - |\alpha_k - \bar{\alpha}| & , \quad |\alpha_k - \bar{\alpha}| > 180 \quad , \\ \alpha_k - \bar{\alpha} & , \quad \text{otherwise} \ . \end{cases}$$

In addition to determining means and standard deviations in rectangular and spherical coordinates, we also determined ellipsoidal test regions about the mean by making use of the F-distribution and multivariate analysis [1], [3]. Statistics were obtained in various coordinate systems because at present no one coordinate system seems to be best. For normal QRS the narrow scatter of alpha between 35 and 50 milliseconds is quite significant as is the anterior to posterior migration of tilt for a complete beat. Alpha looses its diagnostic significance outside the 35 to 50 millisecond interval and hence some other criterion must be used. Rectangular coordinates are easiest to use directly. By using a special purpose analog computer [9] which converts rectangular to spherical coordinates it is possible to use the spherical coordinates directly. At present it still requires some computation to make use of the ellipsoidal coordinates. For a given time, we have statistics in rectangular, spherical and ellipsoidal coordinates which means geometrically that a rectangular box, a spherical section or an ellipsoid may be used as a test region.

To generate an ellipsoid test region R_s we asume that a set S has a multivariate normal distribution with an unknown mean μ which is estimated by the mean of the N points of S. We also assume the unknown covariance matrix associated with S may be estimated by the symmetric matrix

$$(5) \qquad \mathcal{S} = \frac{1}{N-1} \begin{bmatrix} \Sigma(x_i-\bar{x})^2 & \Sigma(x_i-\bar{x})(y_i-\bar{y}) & \Sigma(x_i-\bar{x})(z_i-\bar{z}) \\ . & \Sigma(y_i-\bar{y})^2 & \Sigma(y_i-\bar{y})(z_i-\bar{z}) \\ . & . & \Sigma(z_i-\bar{z})^2 \end{bmatrix}.$$

Let $\bar{w} = (\bar{x}, \bar{y}, \bar{z})^t$ (transpose) be the computed mean of S. Let α be the fraction of allowed false positives, i.e., the allowed fraction of unknowns which do not lie in R_s, but by some other test are found to be members of S. Assuming that q has the same distribution as the points of S then q belongs to S with probability $1 - \alpha$ if

$$(6) \qquad (q - \bar{w})^t \mathcal{S}^{-1} (q - \bar{w}) \leq \frac{m(n+1)(n-1)}{n\,(n-m)} F^{\alpha}_{m,\,n-m} \quad ,$$

where n, m are the number of degrees of freedom of the denominator and numerator, respectively, associated with the F-distribution. In our case $n \cong N$ and $m \cong 3$. Inequality (6) derives from Hotelling's T^2 statistic in multivariate analysis [1]. Geometrically, (6) defines the interior and boundary of an ellipsoid with the mean $\bar{w}$ as center. For fixed n, m, $F^{\alpha}_{m,n-m}$ increases as α decreases, consequently, the size of the ellipsoid increases as α decreases. For a given F the volume of this ellipsoid is given by

$$(7) \qquad V_e = \pi \{m(n+1)(m-1)\, F^{\alpha}_{m,n-m}\, [n(n-m) \textstyle\prod_i \lambda_i]^{-1}\}^{\frac{1}{2}}$$

where λ_i are the eigenvalues of $\mathcal{S}^{-1}$. For completeness, the volume of a spherical section as defined by the spatial magnitude, alpha and tilt is given by

$$(8) \qquad V_s = \iiint r^2 \cos\tau \, dr d\alpha d\tau$$

$$= \frac{r^3}{3} \Bigg|_{\Gamma(0,\bar{r}-k\sigma_r)}^{\bar{r}+k\sigma_r} \sin\tau \Bigg|_{\Gamma(-90,\,\bar{\tau}-k\sigma_\tau)}^{\llcorner(90,\,\bar{\tau}+k\sigma_\tau)} \alpha \Bigg|_{\Gamma(-180,\,\bar{\alpha}-k\sigma_\alpha)}^{\llcorner(180,\,\bar{\alpha}+k\sigma_\alpha)}$$

where k = 1,2 give σ and 2σ volumes and $\Gamma(a,b) = \max(a,b)$, $\llcorner(a,b) = \min(a,b)$.

Preliminary investigations with a simple criterion such as the volume of the enclosing region indicates that the spherical and ellipsoidal volumes are somewhat similar while the rectangular volume is consistently smaller. Further work remains to be done on this important practical problem.

5. Results and Conclusions

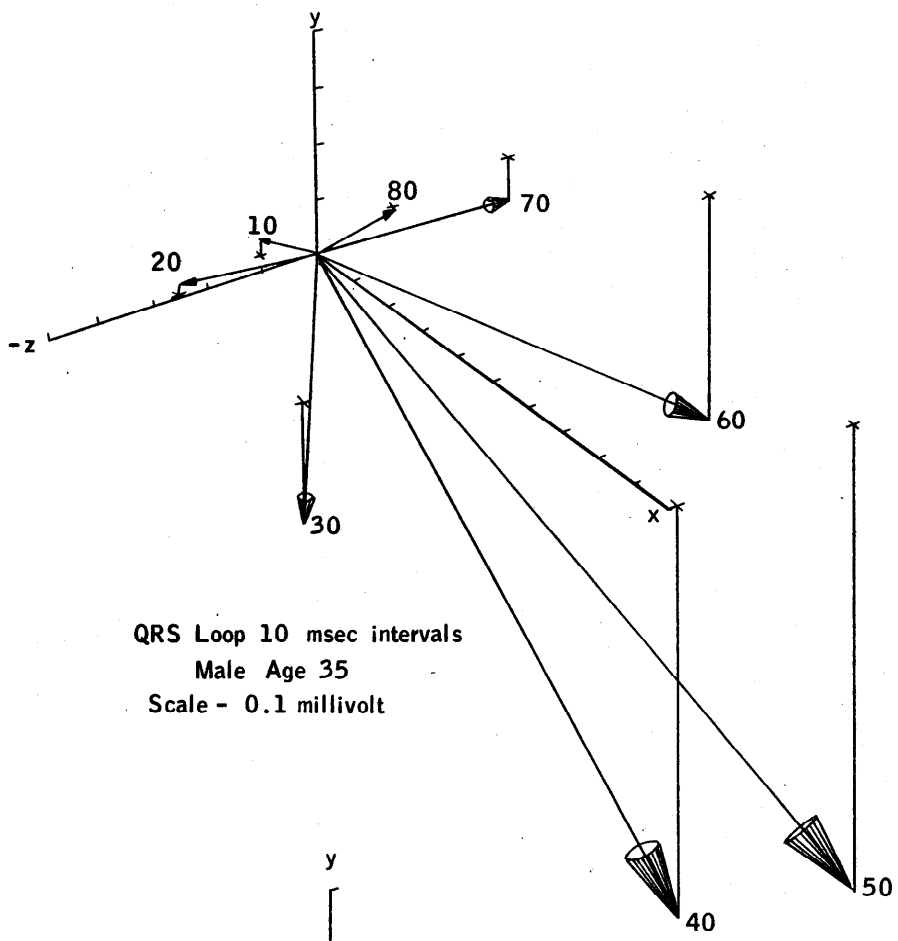
Programs were written for the IBM 7090 in SUBALGOL a Stanford University dialect of Algol. Several programs were required for the data editing and reduction portion of the study. Four programs of approximately 500 statements each were written for the statistical calculations and graphic and tabular output. Information was passed from program to program on magnetic tape and intermediate results were accumulated on the disk. Total 7090 running time for the four programs for one sex and one lead system was approximately 1.1 hours. This does not reflect the many hours spent in developing and debugging the programs. Tables at millisecond intervals for each of P and QRS and at 1/60 of the normalized T Wave (Appendices V, VI) as well as condensed tables at 5 millisecond intervals for P and QRS and 1/30 of the normalized T Wave (Appendices III, IV) in both rectangular and spherical coordinates for 43 age groups were printed. Plots of means modified by one and two standard deviations for ages 20, 25, ..., 60 were also made for both coordinate systems.

Data obtained from using the Frank lead system is emphasized in this report (Appendices III, V, VI). In Appendices III and IV plots and summary tables for men and women for ages 20, 25, 35, 45 and 55 are presented for the Frank and Helm lead systems respectively. P waves were included in Appendix III but not in IV. In Appendix V detailed tables in spherical coordinates for men and women age 35 for the Frank lead system are presented. In Appendix VI plots and detailed tables in rectangular coordinates for men and women age 35 for the Frank lead system are presented. Note that during A/D conversion we obtained a practical resolution of about 0.004 whereas the theoretical resolution was 0.0005. Consequently the rectangular tables are good to two places to the right of the decimal.

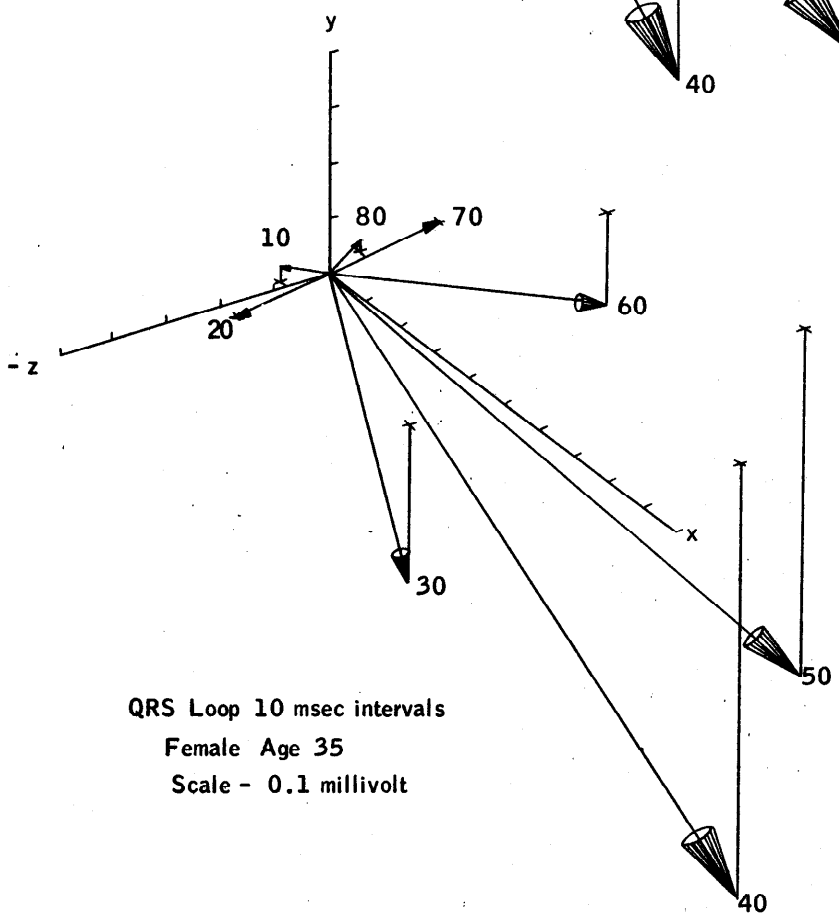
The plots immediately draw attention to the very narrow scatter in alpha for the QRS wave near 45 milliseconds and to the regions in which tilt is never negative. In the T wave one sees a decidely different pattern in tilt for the men and women. Also in the T wave one sees that the minimum scatter in alpha occurs around 22 units. Finally one sees that the P wave has considerable scatter in all coordinates. This, of course, is expected because the magnitude of the P wave is very close to the noise level. Detailed evaluations of this study will appear in [7], [8] .

Figure 3 gives a 3-dimensional representation of the mean QRS loop for age 35 at 10 millisecond intervals. The vectors were plotted from the values $\bar{x}$, $\bar{y}$, $\bar{z}$ which appear in the tables of Appendix V. These plots were prepared for the CalComp plotter by a versatile 3-dimensional plot program written by R. W. Cole, Associate Director of the Stanford Computation Center. If one imagines a large sphere which has the object to be plotted at its center, this program allows the observer to view the object from any point on the sphere and to plot the resulting projection. The cross at the base of the vertical line dropped from the head of the vector represents the point at which that line intersects the xz plane. The coordinate axes are marked every 0.1 millivolts.

Figures 4 and 5 give the durations of the P and QRS waves respectively. The vertical axes represent the percentage of individuals in the study who have wave durations in milliseconds equal to the value expressed on the horizontal axis.



QRS Loop 10 msec intervals
Male Age 35
Scale - 0.1 millivolt



QRS Loop 10 msec intervals
Female Age 35
Scale - 0.1 millivolt

Figure 3 - Three-Dimensional Plot of Mean QRS Loop, Age 35

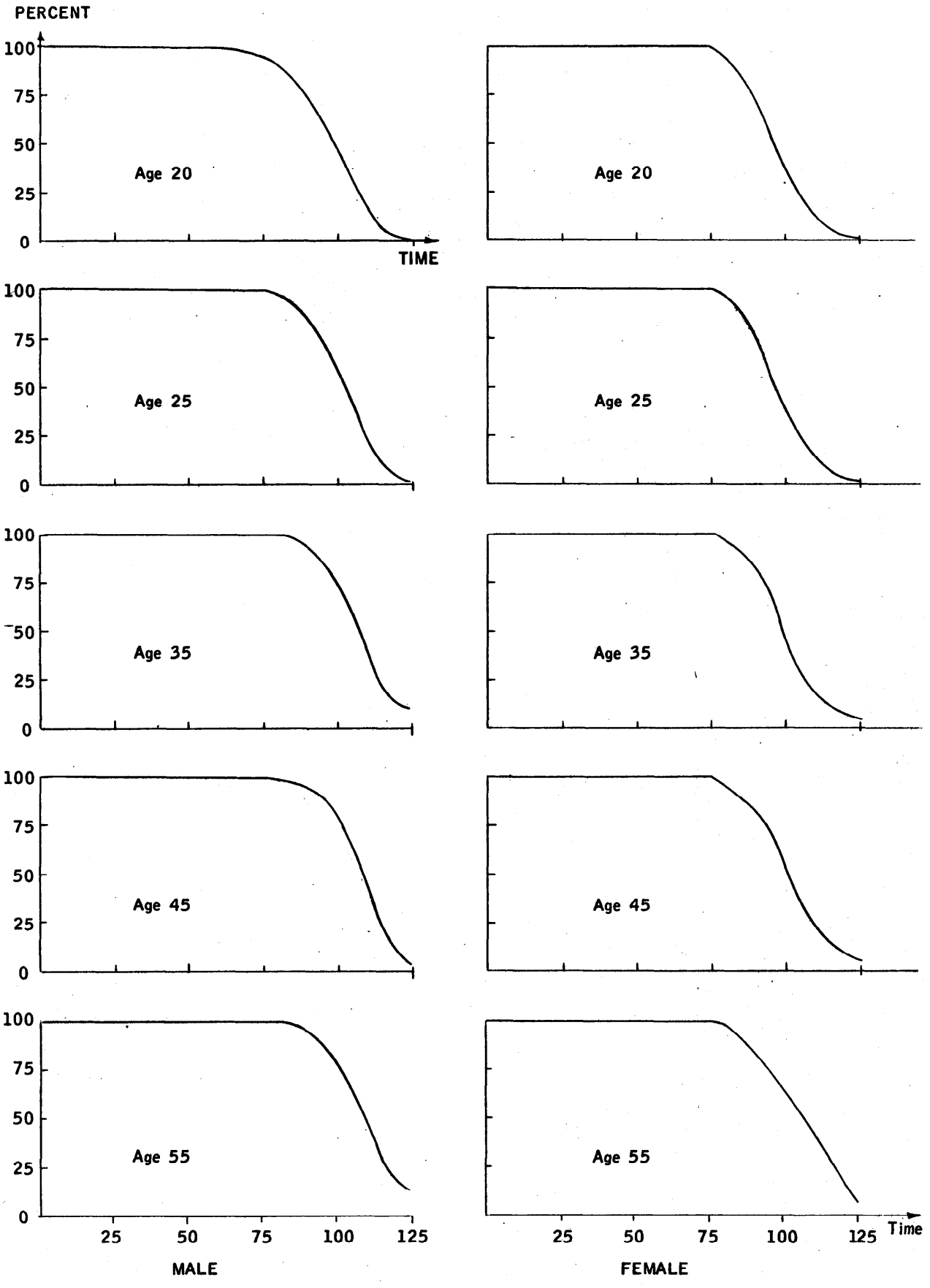


Figure 4 - P Wave Duration by Age and Sex

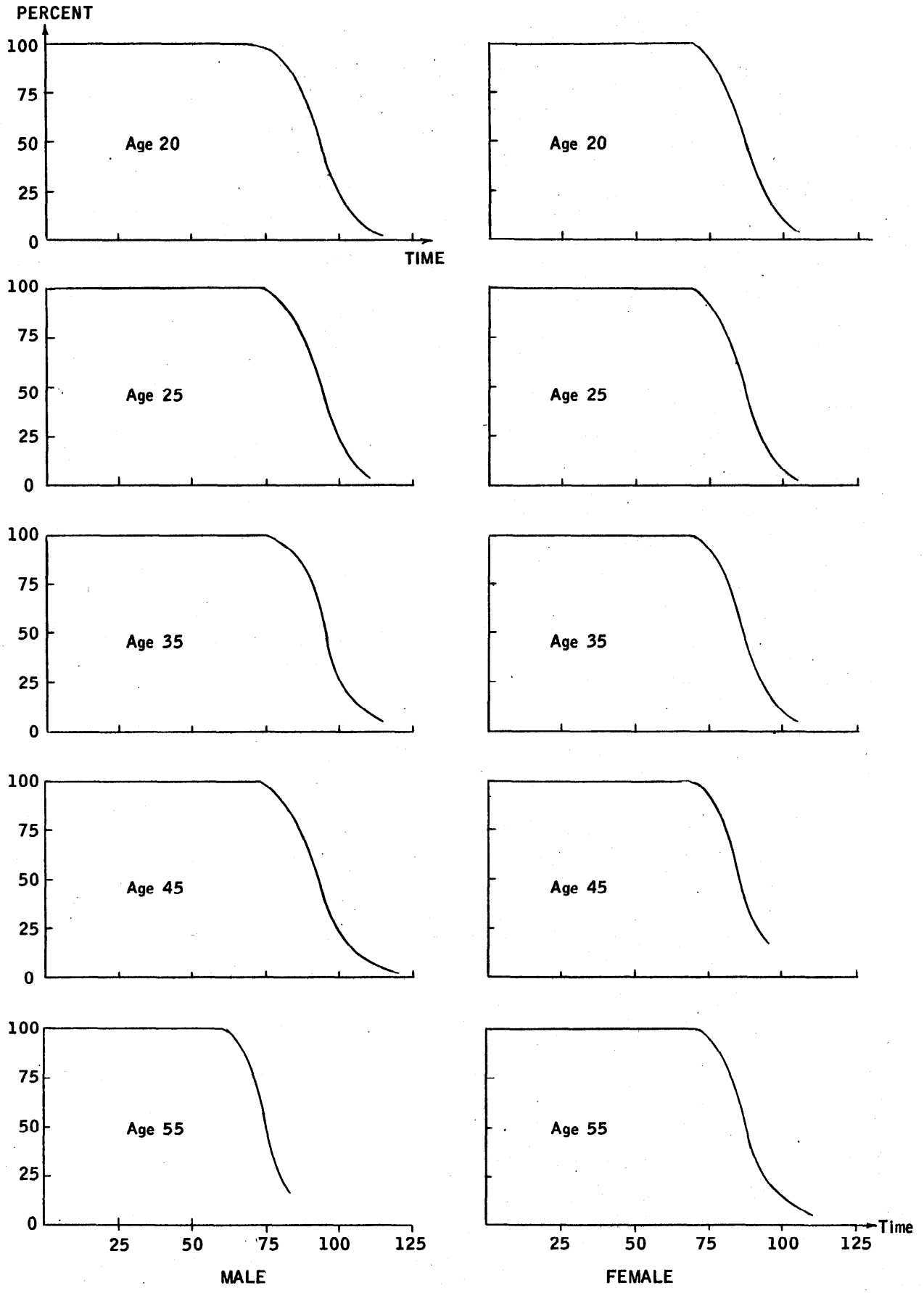


Figure 5 - QRS Wave Duration by Age and Sex

Future computing work on this project will proceed along the following lines:

1. Definition and implementation of a foolproof onset/offset determination program [12], [13] .
2. Definition and implementation of an algorithm to separate normals and nonnormals. In addition to abnormals, the nonnormal classification contain individuals such as athletes with very large spatial magnitudes, etc.
3. Increase the sample of normals.
4. Definition and implementation of filtering programs to reduce noise with particular emphasis placed on P waves.
5. Set up statistical libraries of abnormalities of known types.
6. Definition and implementation of a discrimination algorithm to separate normals and abnormals with the abnormals placed in appropriate categories.
7. Making these tools available at a clinical level at Stanford University Medical Center.

6. Acknowledgment

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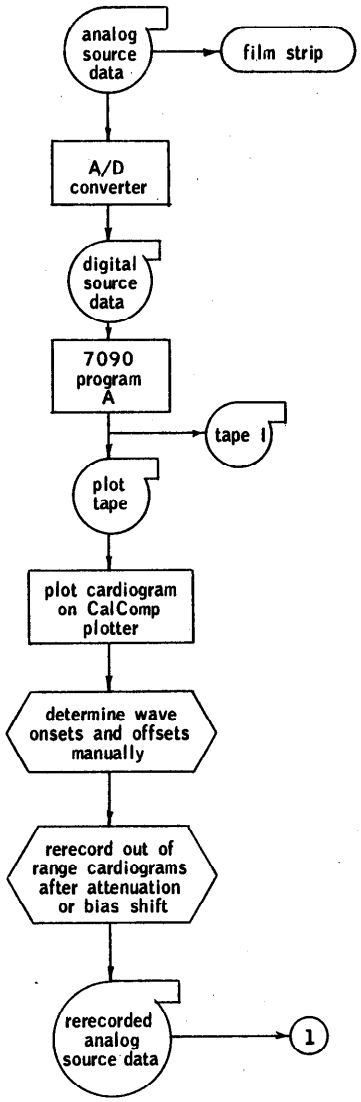
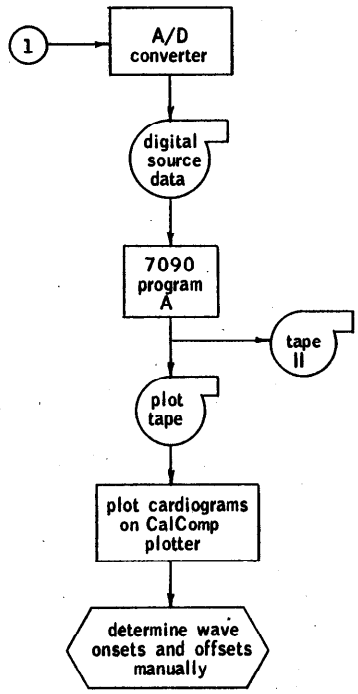
Appendix I

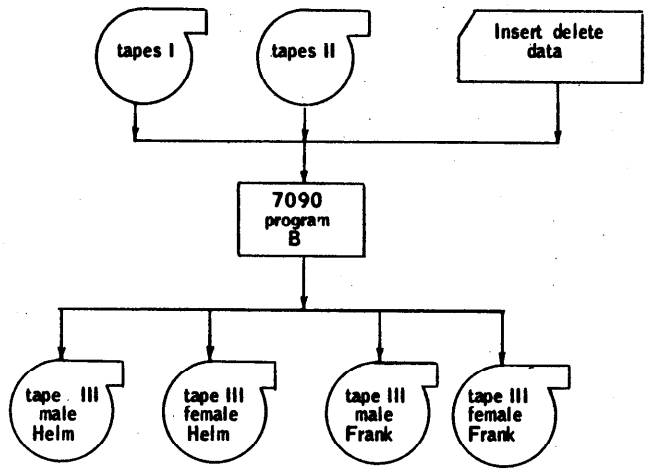
Data Processing Sequence





tape I: edited cardiograms and calibration curves. (12 such tapes)

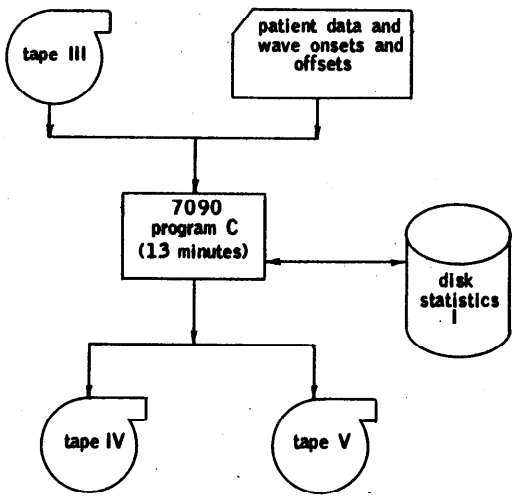
tape II: edited rerecorded cardiograms and calibration curves (3 such tapes)



12 tapes I and 3 tapes II served as input to program B.

tape III: cardiograms with out of range peaks on tape I replaced by corresponding peaks from II. Original 12 tapes I are merged onto 4 tapes according to sex and lead system.

Each one of tapes III is the initial input to the following processing steps.

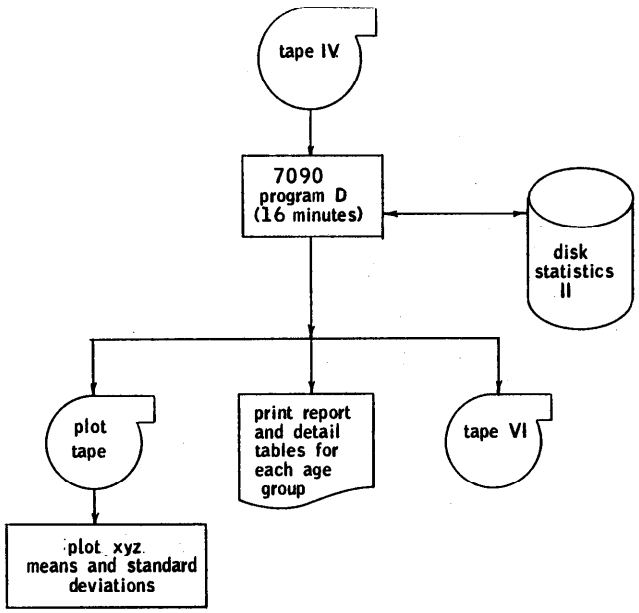


disk statistics I: same data as tape IV below.

tape IV: initial statistics at 1 msec intervals for each wave, P, QRS, T. A total of 6000 words per record and 50 records. Statistics consist of 420 words for each of following:

N, Σx_i, Σy_i, Σz_i, Σr_i, $\Sigma(x_i/r_i)$, $\Sigma(y_i/r_i)$, $\Sigma(z_i/r_i)$, $\Sigma(x_i^2)$, $\Sigma(y_i^2)$, $\Sigma(z_i^2)$, $\Sigma(x_i y_i)$, $\Sigma(x_i z_i)$, $\Sigma(y_i z_i)$.

tape V: patient data, onsets, offsets, and identification merged with cardiogram.



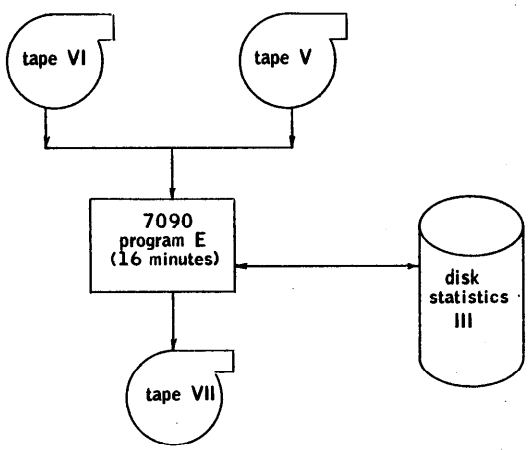
disk statistics II: same data as tape VI below.

tape VI: secondary statistics at 1 msec intervals for each wave, P, QRS, T. A total of 8000 words per record and 43 records. Statistics consist of 420 words for each of following:

$N, \bar{x}, \bar{y}, \bar{z}, \sigma_x, \sigma_y, \sigma_z, \bar{r}, \sigma_r,$

$\overline{sm}, \bar{\alpha}, \bar{t}, e_{xx}, e_{yy}, e_{zz}, e_{xy},$

e_{xz}, e_{yz} .



disk statistics III: same data as tape VII below.

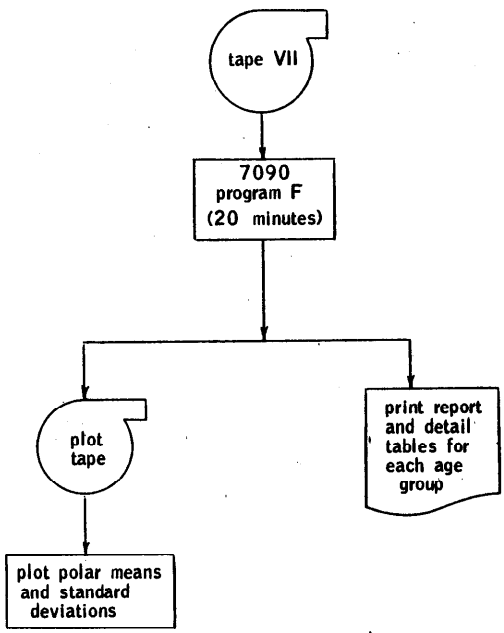
tape VII: final statistics at 1 msec intervals for each wave, P, QRS, T. A total of 10000 words per record and 43 records. Statistics consist of 420 words for each of the following:

$N, \bar{x}, \bar{y}, \bar{z}, \sigma_x, \sigma_y, \sigma_z, \bar{r}, \sigma_r,$

$\overline{sm}, \bar{\alpha}, \bar{\tau}, e_{xx}, e_{yy}, e_{zz}, e_{xy},$

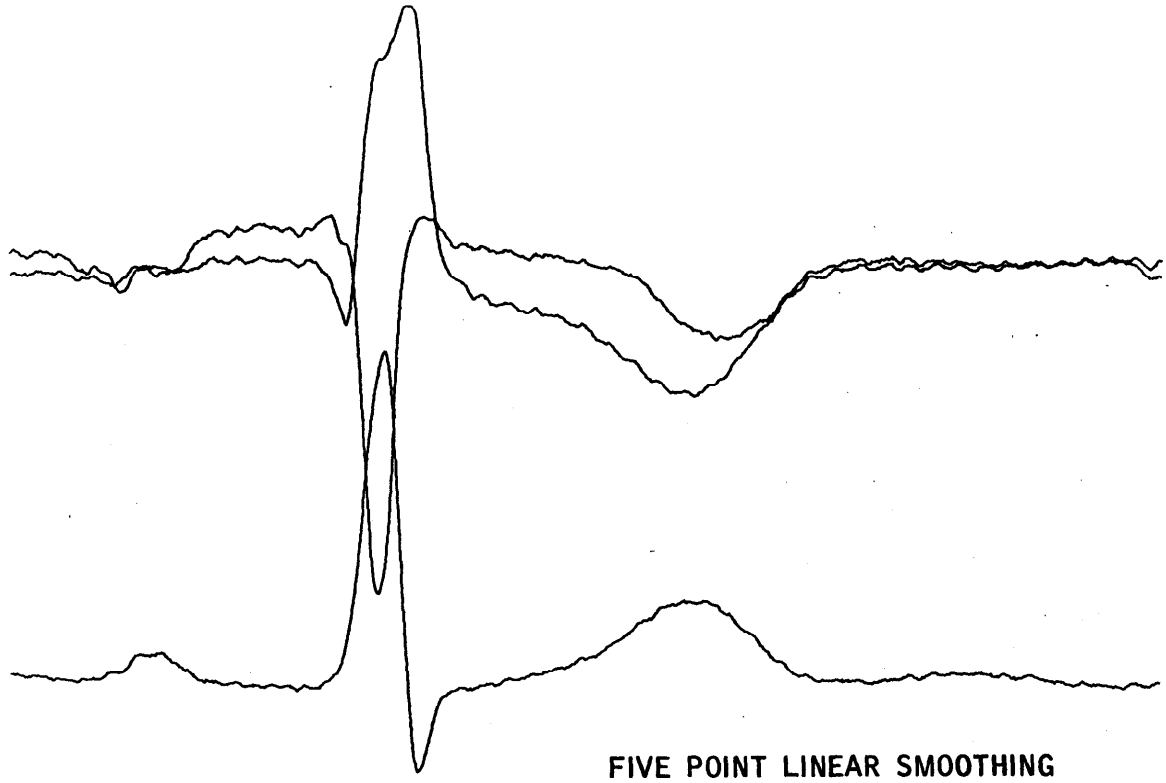
$e_{xz}, e_{yz}, \Sigma(\alpha_i - \bar{\alpha})^2, \Sigma(\tau_i - \bar{\tau})^2,$

σ_α, σ_t .

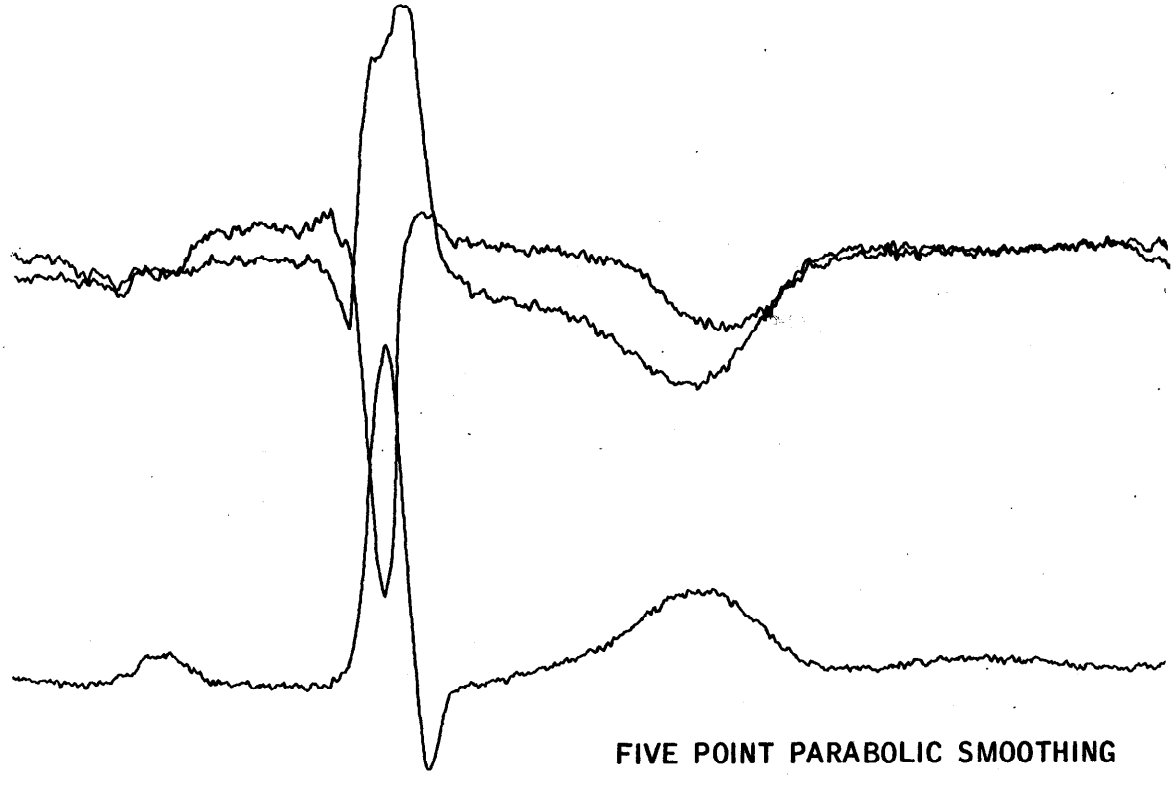


Appendix II

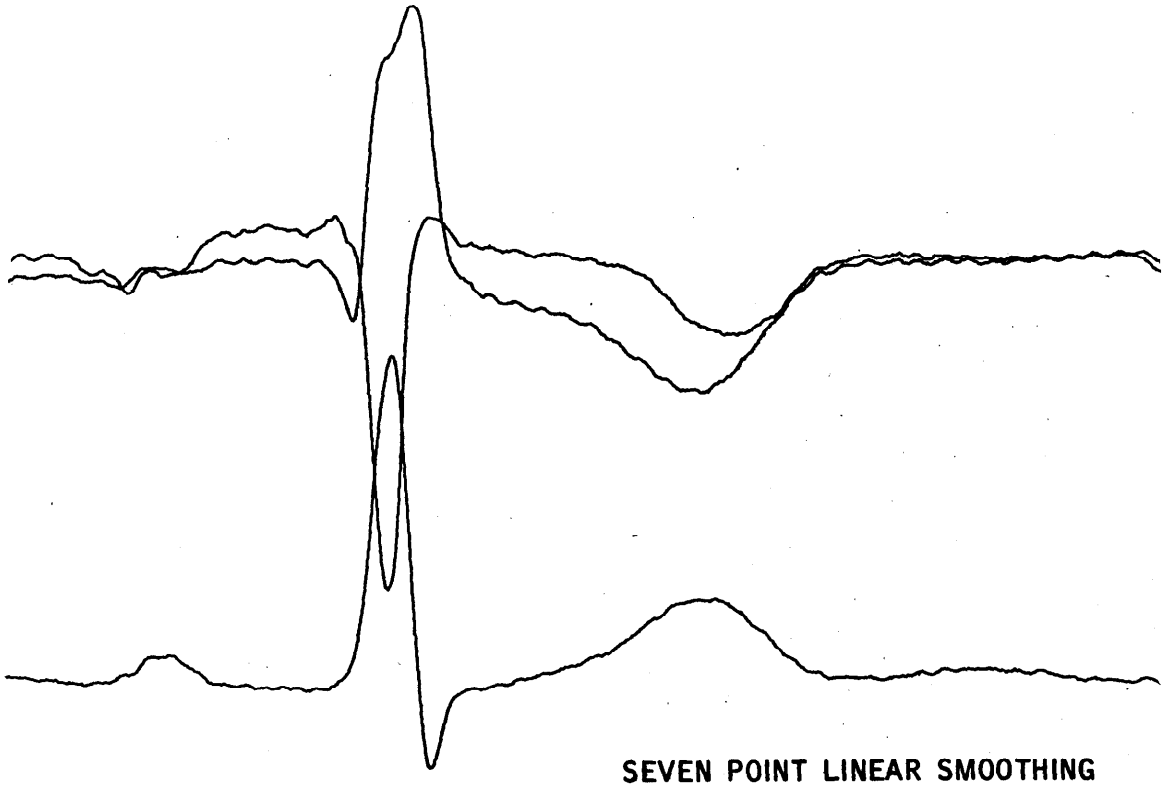
Linear and Parabolic Smoothing



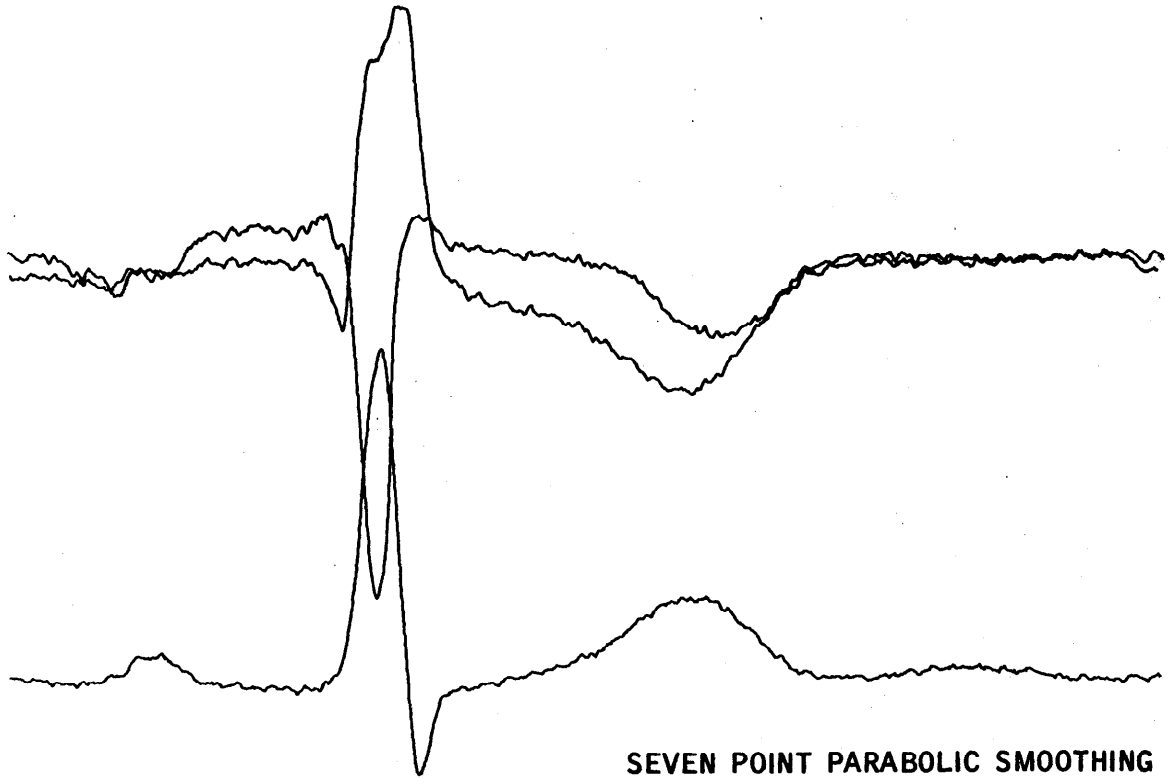
FIVE POINT LINEAR SMOOTHING



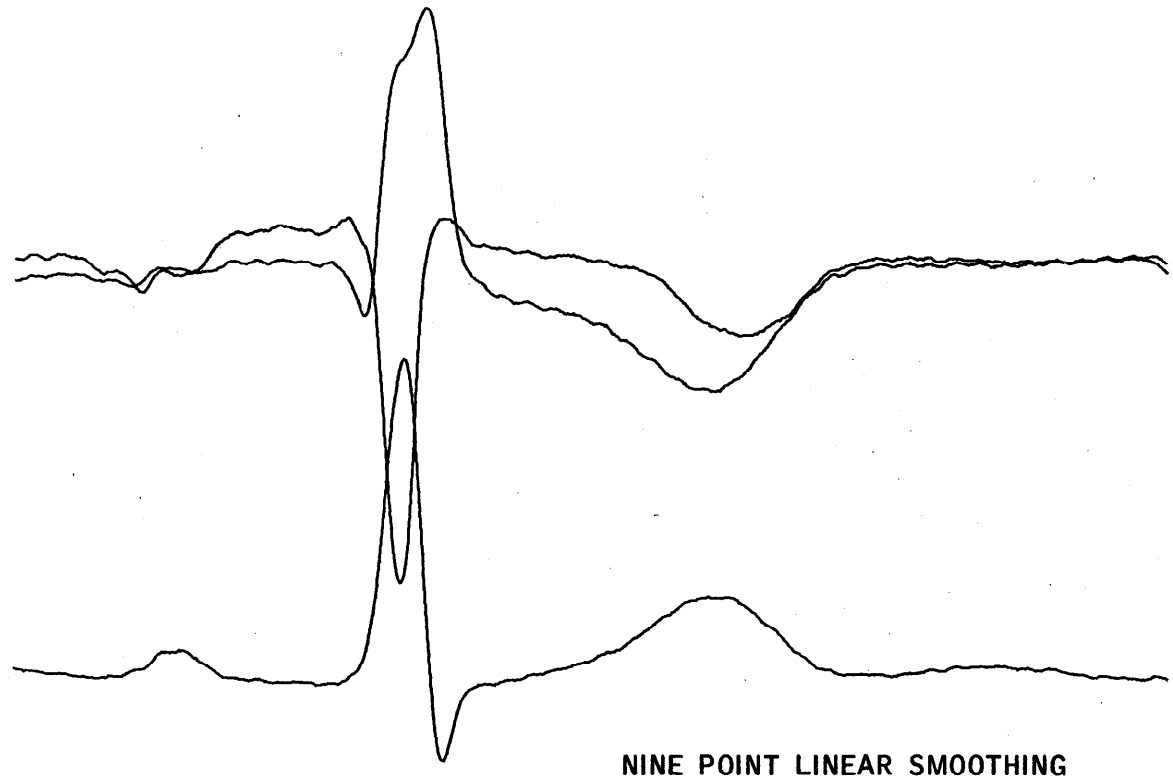
FIVE POINT PARABOLIC SMOOTHING



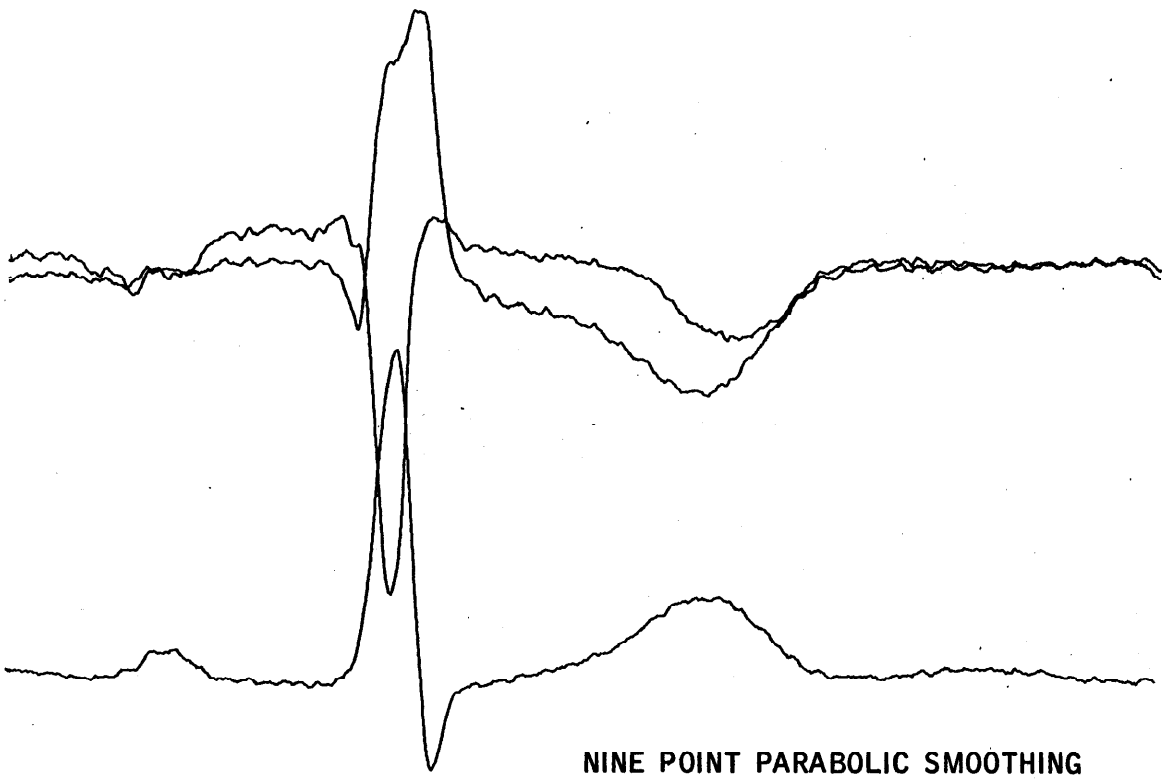
SEVEN POINT LINEAR SMOOTHING



SEVEN POINT PARABOLIC SMOOTHING



NINE POINT LINEAR SMOOTHING

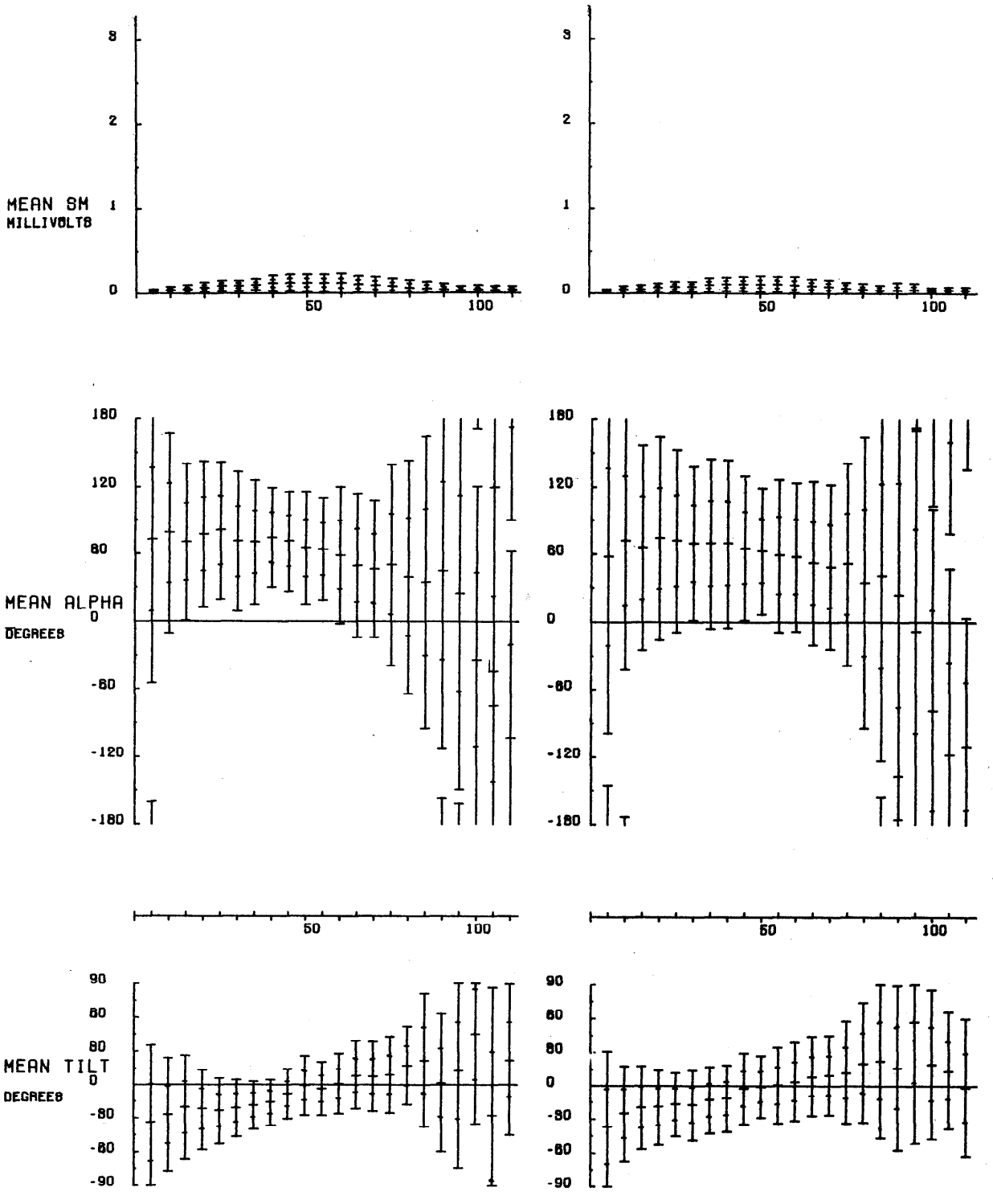


NINE POINT PARABOLIC SMOOTHING

Appendix III

Means and Standard Deviations (Graphical and Tabular*) for the Frank Lead System for P, QRS, and T in Spherical coordinates.

*See text Section 5 for a note on accuracy of data.



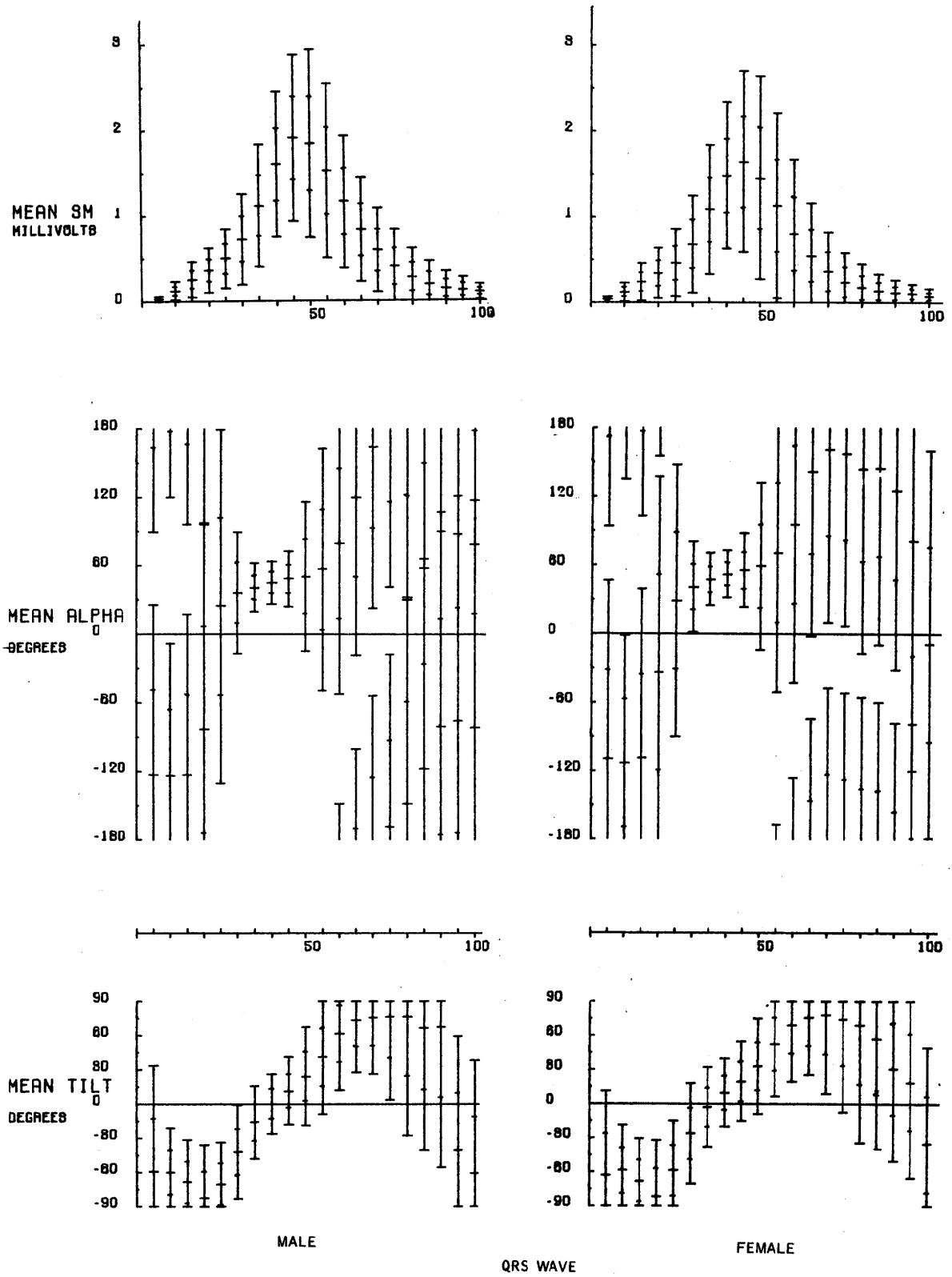
P WAVE
AGE 20 FRANK LEAD SYSTEM

P WAVE FOR MALE AGE 20 FRANK LEAD SYSTEM
AVERAGE AGE IS 19.4

N	SMAG	SDSM	ALPHA	SDA	TILT	SDT	TIME
78.	.0285	.0123	72.91	63.85	-33.66	34.59	5.0
78.	.0406	.0217	78.48	44.49	-26.86	25.33	10.0
78.	.0504	.0240	70.50	34.69	-20.27	23.12	15.0
78.	.0726	.0269	77.49	32.50	-21.83	17.79	20.0
77.	.0868	.0292	80.67	30.68	-23.20	14.55	25.0
77.	.0895	.0305	71.07	31.03	-21.13	12.67	30.0
77.	.1013	.0327	70.53	27.78	-18.42	10.73	35.0
77.	.1182	.0434	74.54	22.43	-15.99	10.37	40.0
77.	.1250	.0488	71.13	22.36	-7.97	11.28	45.0
77.	.1195	.0480	65.01	25.13	-.99	13.33	50.0
77.	.1226	.0499	63.98	22.72	-3.78	11.95	55.0
77.	.1153	.0564	58.70	30.51	.90	13.58	60.0
77.	.1014	.0479	49.55	32.01	8.42	15.17	65.0
75.	.0902	.0485	46.61	30.49	7.28	15.60	70.0
75.	.0758	.0478	50.50	44.57	8.63	17.23	75.0
72.	.0648	.0424	39.40	51.98	16.92	17.34	80.0
67.	.0545	.0399	34.83	64.86	21.67	29.55	85.0
61.	.0430	.0317	45.34	79.09	1.63	30.54	90.0
49.	.0334	.0236	24.94	87.03	12.42	43.39	95.0
35.	.0391	.0239	-33.65	77.33	44.66	39.91	100.0
23.	.0338	.0223	120.06	97.67	-27.99	57.17	105.0
17.	.0393	.0200	-103.71	83.09	22.08	33.45	110.0
4.	.0480	.0152	-60.89	45.41	21.72	9.76	115.0

P WAVE FOR FEMALE AGE 20 FRANK LEAD SYSTEM
AVERAGE AGE IS 19.3

N	SMAG	SDSM	ALPHA	SDA	TILT	SDT	TIME
91.	.0288	.0124	57.80	78.50	-36.38	33.41	5.0
91.	.0461	.0214	72.33	57.17	-24.83	21.51	10.0
91.	.0538	.0243	65.77	45.45	-19.18	18.59	15.0
91.	.0661	.0283	74.16	44.93	-18.88	16.63	20.0
91.	.0804	.0311	71.67	40.49	-16.34	14.19	25.0
91.	.0838	.0304	69.61	34.06	-17.02	15.79	30.0
91.	.0969	.0392	69.50	37.69	-12.78	14.87	35.0
91.	.1089	.0393	69.48	37.38	-11.50	15.02	40.0
91.	.1123	.0414	65.59	32.01	-2.59	15.80	45.0
91.	.1146	.0458	62.93	28.16	-.73	13.89	50.0
91.	.1082	.0466	59.03	33.97	.49	17.03	55.0
91.	.1009	.0475	57.53	32.94	3.90	17.67	60.0
91.	.0898	.0426	52.31	36.41	8.56	17.72	65.0
91.	.0776	.0400	49.12	36.73	9.42	17.86	70.0
89.	.0620	.0343	51.47	44.70	11.81	22.94	75.0
86.	.0521	.0316	34.85	64.79	20.44	26.82	80.0
79.	.0439	.0260	41.12	81.89	22.20	34.43	85.0
68.	.0369	.0457	24.04	99.88	16.35	36.53	90.0
47.	.0411	.0381	-8.61	90.41	57.05	54.11	95.0
34.	.0369	.0146	-78.82	89.38	19.38	33.20	100.0
21.	.0412	.0185	-117.65	82.32	13.76	26.07	105.0
11.	.0378	.0205	-110.27	56.97	-1.68	30.82	110.0
5.	.0534	.0271	-81.98	56.70	33.07	20.30	115.0



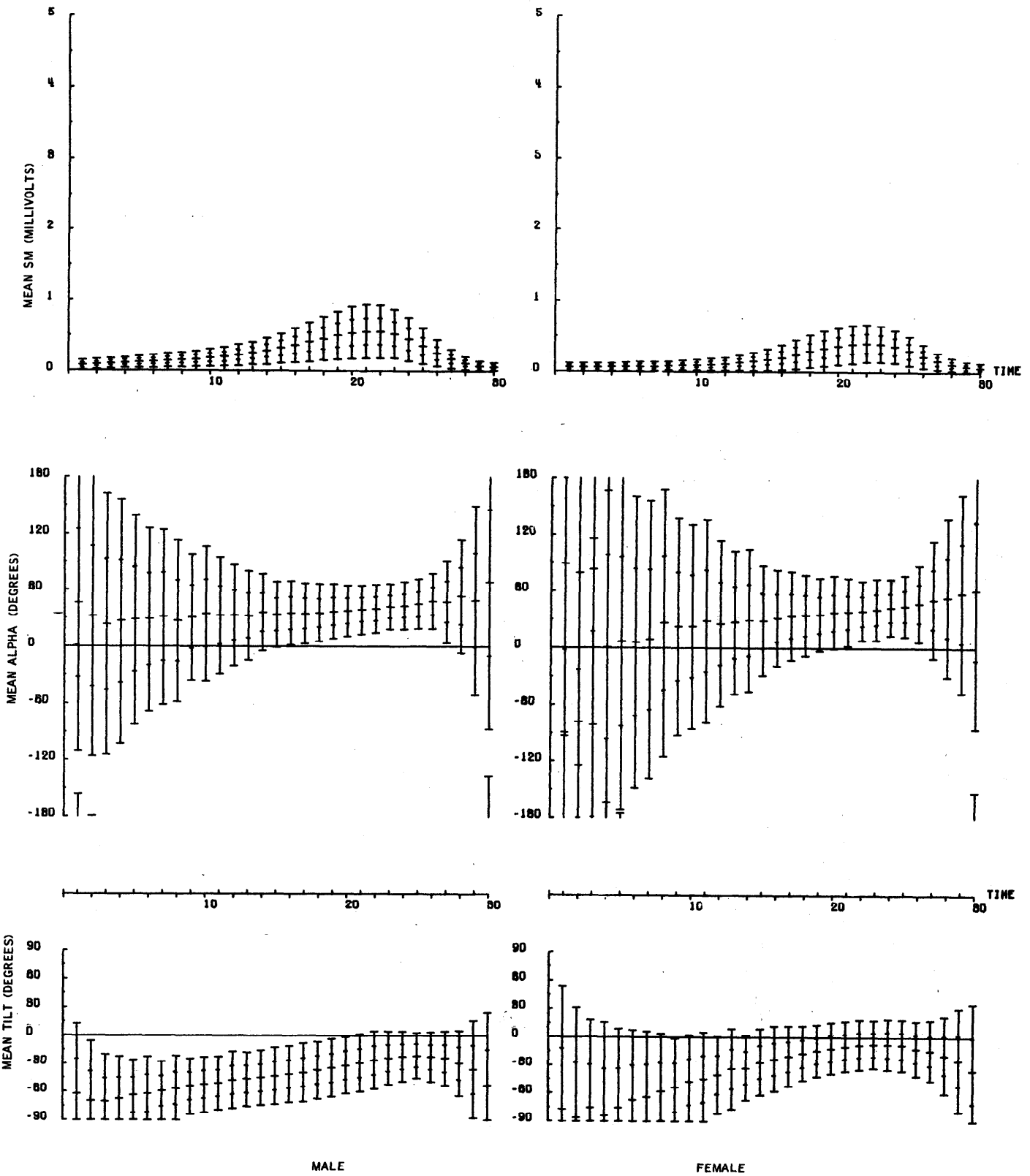
QRS WAVE
AGE 20 FRANK LEAD SYSTEM

QRS WAVE FOR MALE AGE 20 FRANK LEAD SYSTEM
AVERAGE AGE IS 19.4

N	SMAG	SDSM	ALPHA	SDA	TILT	SDT	TIME
78.	.0322	.0152	-122.75	74.04	-59.58	46.77	5.0
78.	.1221	.0523	-123.95	58.03	-60.04	19.70	10.0
78.	.2527	.1035	-123.20	70.31	-68.41	18.46	15.0
78.	.3614	.1311	-83.55	90.35	-82.78	23.36	20.0
78.	.4970	.1739	24.49	77.55	-70.20	18.18	25.0
78.	.7245	.2651	36.04	26.60	-42.03	20.56	30.0
78.	1.1148	.3592	40.86	10.52	-16.04	16.06	35.0
78.	1.5991	.4250	45.19	9.44	.12	13.07	40.0
78.	1.9053	.4890	48.38	12.16	11.62	14.90	45.0
78.	1.8403	.5484	50.51	32.70	24.29	21.53	50.0
78.	1.5227	.5111	56.67	53.05	41.20	25.21	55.0
78.	1.1566	.3888	79.77	65.95	61.64	24.71	60.0
78.	.8268	.3057	120.12	69.54	73.29	22.67	65.0
78.	.5863	.2455	164.08	70.83	76.00	24.86	70.0
78.	.3979	.2165	-168.47	75.30	76.76	36.45	75.0
75.	.2730	.1670	-148.76	89.37	76.44	52.00	80.0
62.	.1949	.1347	-118.03	91.99	66.54	53.46	85.0
49.	.1422	.0994	-81.14	94.33	67.77	61.47	90.0
30.	.1239	.0739	-75.50	98.44	-40.34	49.85	95.0
17.	.1000	.0444	-81.62	99.85	-60.72	49.65	100.0
11.	.0874	.0363	64.35	67.99	-73.70	47.46	105.0
3.	.0453	.0123	174.20	38.41	-75.03	26.00	110.0
	TERMINAL VALUES AT 10 MS INTERVALS						
78.	1.5731	.6055	55.91	53.20	33.72	26.85	-40.0
78.	1.0196	.4711	85.85	80.00	69.59	30.63	-30.0
78.	.5506	.2453	-157.22	71.60	70.31	30.75	-20.0
78.	.2119	.1010	-109.69	93.26	69.98	51.24	-10.0

QRS WAVE FOR FEMALE AGE 20 FRANK LEAD SYSTEM
AVERAGE AGE IS 19.2

N	SMAG	SDSM	ALPHA	SDA	TILT	SDT	TIME
94.	.0350	.0151	-109.71	78.15	-63.05	37.03	5.0
94.	.1232	.0548	-113.27	56.04	-58.87	20.11	10.0
94.	.2405	.1086	-109.07	74.11	-67.91	18.58	15.0
94.	.3415	.1480	-33.61	85.42	-81.98	24.91	20.0
94.	.4609	.1971	28.75	59.45	-58.78	22.02	25.0
94.	.6806	.2849	40.72	19.79	-26.30	22.26	30.0
94.	1.0862	.3761	47.32	11.42	-2.97	17.46	35.0
94.	1.4805	.4274	52.07	10.28	9.82	15.07	40.0
94.	1.6416	.5273	55.27	16.18	19.85	17.27	45.0
94.	1.4537	.5911	58.88	36.42	32.84	20.90	50.0
94.	1.1290	.5402	70.86	60.85	52.66	23.09	55.0
94.	.8007	.4341	95.41	69.25	68.96	24.85	60.0
94.	.5443	.3080	141.85	71.95	75.91	25.05	65.0
94.	.3613	.2299	161.50	75.81	78.33	34.52	70.0
90.	.2330	.1750	157.40	75.39	74.59	40.96	75.0
74.	.1723	.1413	143.63	80.36	68.97	51.68	80.0
54.	.1314	.1010	144.92	77.48	57.21	48.61	85.0
34.	.1069	.0759	125.44	78.31	30.46	40.42	90.0
17.	.0964	.0581	80.65	100.21	19.12	42.26	95.0
9.	.0687	.0432	-9.31	84.86	-35.44	42.43	100.0
2.	.0521	.0043	107.25	83.51	-52.57	35.39	105.0
	TERMINAL VALUES AT 10 MS INTERVALS						
94.	1.5084	.5259	58.48	35.55	25.41	21.73	-40.0
94.	1.0070	.4303	73.40	59.75	54.97	24.40	-30.0
94.	.4901	.2332	157.39	63.02	73.60	26.99	-20.0
94.	.1853	.0988	179.11	77.04	75.43	44.49	-10.0



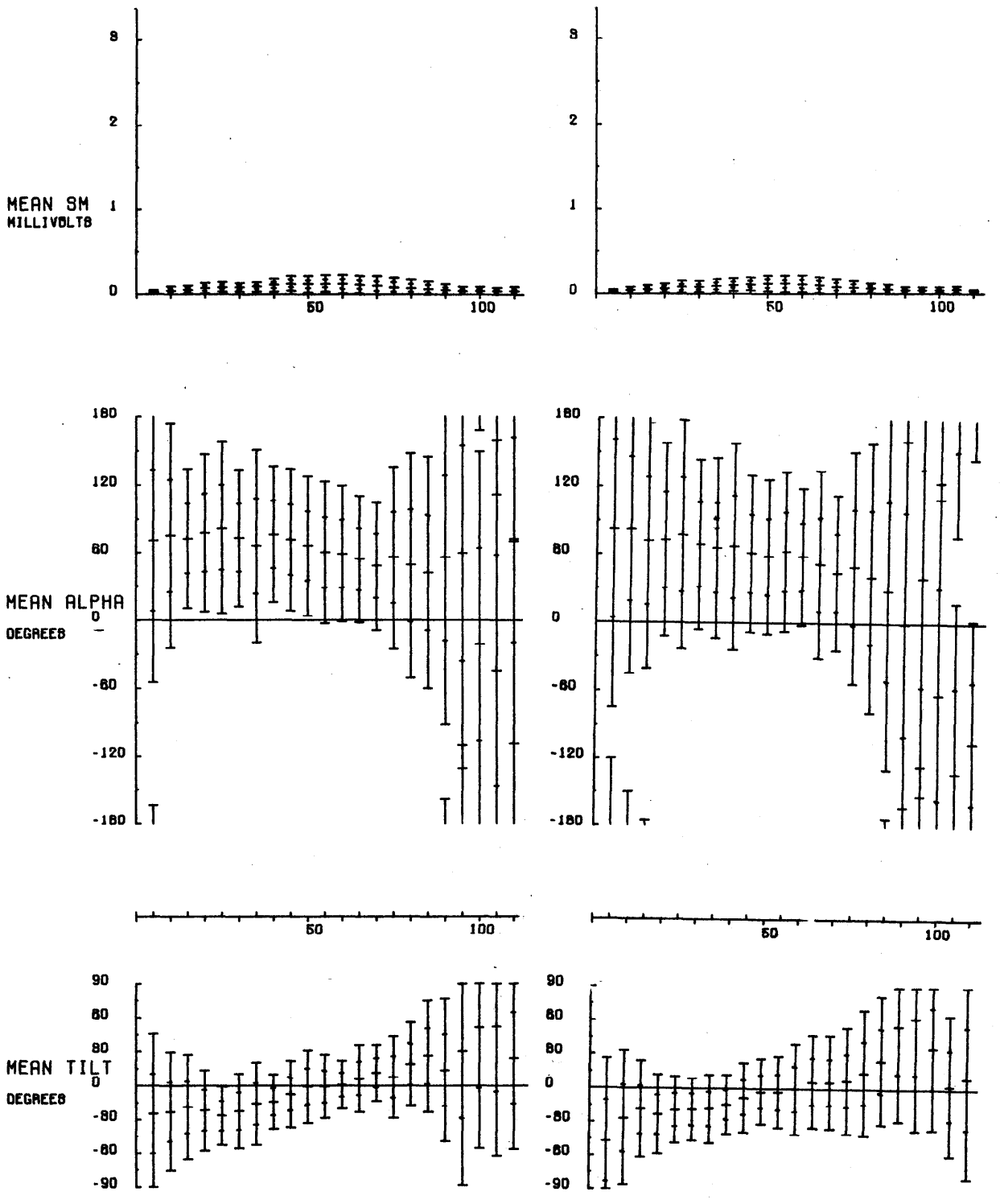
T WAVE
AGE 20 FRANK LEAD SYSTEM

T WAVE FOR MALE AGE 20 FRANK LEAD SYSTEM
AVERAGE AGE IS 19.4

N	SMAG	SDSM	ALPHA	SDA	TILT	SDT	TIME
78.	.0793	.0346	46.32	78.69	-62.07	37.54	2.0
78.	.0889	.0333	32.22	74.14	-70.03	31.89	4.0
78.	.1013	.0344	23.39	69.25	-70.82	25.28	6.0
78.	.1119	.0360	26.76	64.75	-67.34	22.45	8.0
78.	.1172	.0404	28.21	55.45	-63.79	18.75	10.0
78.	.1297	.0428	28.92	48.50	-62.08	19.87	12.0
78.	.1418	.0457	31.40	46.44	-59.62	15.88	14.0
78.	.1516	.0487	27.05	42.59	-56.63	17.26	16.0
78.	.1647	.0544	30.86	33.34	-54.35	14.95	18.0
78.	.1820	.0606	34.65	35.53	-52.64	14.78	20.0
78.	.1980	.0639	32.87	30.92	-50.90	14.13	22.0
78.	.2212	.0736	33.00	26.53	-47.72	15.11	24.0
78.	.2454	.0794	32.47	23.48	-46.74	14.48	26.0
78.	.2778	.0917	35.72	20.24	-45.17	14.54	28.0
78.	.3151	.1038	33.94	17.21	-43.15	15.21	30.0
78.	.3597	.1199	35.26	17.03	-41.18	15.05	32.0
78.	.4060	.1364	34.78	16.05	-39.42	15.41	34.0
78.	.4532	.1518	35.36	15.15	-36.88	15.24	36.0
78.	.4993	.1674	37.11	14.43	-34.73	15.43	38.0
78.	.5334	.1823	37.31	13.45	-31.90	15.05	40.0
78.	.5544	.1872	38.90	12.94	-29.38	15.35	42.0
78.	.5532	.1851	39.66	12.62	-26.44	15.29	44.0
78.	.5181	.1701	41.71	12.00	-24.03	14.38	46.0
78.	.4471	.1527	43.09	12.60	-22.49	13.44	48.0
78.	.3488	.1235	44.72	13.15	-21.40	12.32	50.0
78.	.2508	.0929	48.15	14.55	-22.79	13.19	52.0
78.	.1695	.0632	46.97	21.78	-24.32	14.42	54.0
78.	.1112	.0438	53.31	30.05	-29.52	17.39	56.0
78.	.0732	.0318	49.07	49.96	-36.16	25.98	58.0
78.	.0628	.0269	68.07	77.51	-53.60	38.92	60.0

T WAVE FOR FEMALE AGE 20 FRANK LEAD SYSTEM
AVERAGE AGE IS 19.2

N	SMAG	SDSM	ALPHA	SDA	TILT	SDT	TIME
94.	.0574	.0294	88.84	91.02	-77.23	65.14	2.0
94.	.0601	.0295	78.44	101.60	-86.07	58.84	4.0
94.	.0630	.0305	-80.70	98.27	-75.93	46.92	6.0
94.	.0663	.0286	1.09	97.30	-83.90	49.87	8.0
94.	.0686	.0311	6.64	89.09	-75.65	42.16	10.0
94.	.0732	.0323	5.88	77.12	-67.72	37.74	12.0
94.	.0740	.0326	8.71	73.78	-64.66	35.37	14.0
94.	.0800	.0311	25.94	70.56	-58.42	31.02	16.0
94.	.0854	.0352	22.51	57.32	-54.13	26.13	18.0
94.	.0928	.0368	22.53	54.08	-47.87	24.91	20.0
94.	.1032	.0422	28.36	53.71	-44.98	25.11	22.0
94.	.1117	.0466	25.61	43.68	-40.43	20.73	24.0
94.	.1291	.0524	26.70	37.60	-33.99	21.51	26.0
94.	.1467	.0629	29.38	37.47	-32.68	17.58	28.0
94.	.1735	.0746	28.40	28.94	-26.68	17.74	30.0
94.	.2041	.0883	31.67	25.19	-23.18	17.42	32.0
94.	.2446	.1033	33.59	23.29	-20.54	16.12	34.0
94.	.2871	.1145	34.21	21.14	-17.42	14.58	36.0
94.	.3292	.1243	35.12	19.07	-14.17	13.83	38.0
94.	.3634	.1299	37.39	19.17	-11.86	13.73	40.0
94.	.3915	.1350	37.91	17.87	-9.42	13.34	42.0
94.	.4048	.1336	39.20	15.63	-7.91	13.26	44.0
94.	.3935	.1282	40.55	16.15	-7.37	12.73	46.0
94.	.3601	.1168	42.77	14.82	-7.49	13.34	48.0
94.	.2950	.1011	44.26	16.20	-8.57	13.76	50.0
94.	.2241	.0811	47.15	20.10	-11.83	14.54	52.0
94.	.1583	.0578	51.32	30.90	-14.21	15.99	54.0
94.	.1096	.0444	53.08	41.98	-19.28	20.57	56.0
94.	.0788	.0355	57.92	52.58	-25.11	27.37	58.0
94.	.0637	.0332	60.71	73.14	-35.91	35.51	60.0



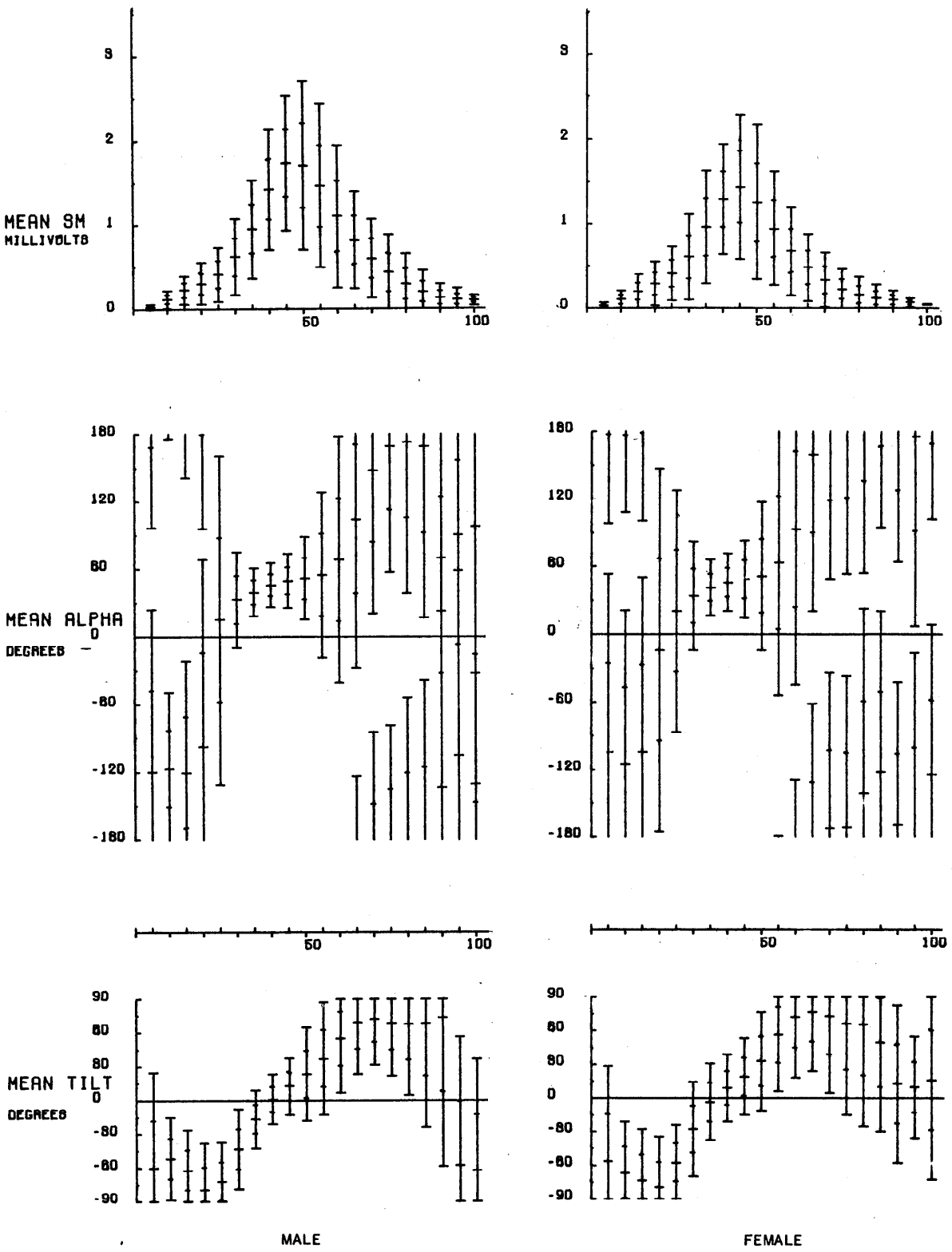
P WAVE
AGE 25 FRANK LEAD SYSTEM

P WAVE FOR MALE AGE 25 FRANK LEAD SYSTEM
AVERAGE AGE IS 24.8

N	SMAG	SDSM	ALPHA	SDA	TILT	SDT	TIME
43.	.0293	.0118	70.87	62.89	-24.59	35.32	5.0
43.	.0421	.0228	74.69	49.77	-23.27	26.25	10.0
43.	.0545	.0224	72.21	31.04	-19.10	22.94	15.0
43.	.0697	.0288	77.37	34.79	-22.02	17.94	20.0
43.	.0837	.0282	82.10	37.89	-26.62	13.05	25.0
43.	.0810	.0255	72.93	30.45	-22.41	16.38	30.0
43.	.0855	.0285	65.71	42.51	-15.97	18.29	35.0
43.	.1056	.0373	76.09	30.05	-14.32	11.90	40.0
43.	.1218	.0432	71.22	31.40	-7.50	14.60	45.0
43.	.1165	.0472	65.76	30.87	-1.03	15.81	50.0
43.	.1231	.0462	60.19	31.47	-.81	13.91	55.0
43.	.1177	.0530	58.70	30.24	.92	10.55	60.0
43.	.1086	.0504	54.05	27.98	6.34	14.69	65.0
43.	.0964	.0552	47.89	28.30	11.36	12.50	70.0
43.	.0841	.0528	55.27	40.42	7.64	18.08	75.0
42.	.0737	.0475	48.38	49.75	18.92	18.19	80.0
40.	.0637	.0454	42.34	51.02	25.94	24.62	85.0
38.	.0495	.0335	55.19	73.23	13.43	31.48	90.0
34.	.0403	.0238	59.31	95.28	30.37	59.26	95.0
25.	.0404	.0250	-21.24	85.23	51.37	53.54	100.0
19.	.0368	.0239	-44.24	101.87	51.68	57.05	105.0
13.	.0408	.0231	-108.88	89.42	24.26	40.31	110.0
5.	.0392	.0210	-71.30	31.83	22.73	6.79	115.0
2.	.0346	.0072	-63.79	33.95	9.08	5.12	120.0

P WAVE FOR FEMALE AGE 25 FRANK LEAD SYSTEM
AVERAGE AGE IS 24.3

N	SMAG	SDSM	ALPHA	SDA	TILT	SDT	TIME
40.	.0308	.0116	82.73	78.75	-46.89	36.51	5.0
40.	.0378	.0194	82.23	63.71	-26.75	29.89	10.0
40.	.0515	.0235	71.94	56.13	-19.04	21.38	15.0
40.	.0642	.0270	72.92	42.59	-23.34	17.55	20.0
40.	.0757	.0347	77.52	50.55	-19.32	14.76	25.0
40.	.0815	.0326	69.02	37.43	-18.64	14.00	30.0
40.	.0911	.0382	66.29	39.77	-18.16	15.22	35.0
40.	.1029	.0362	67.21	45.48	-14.25	13.13	40.0
40.	.1134	.0388	61.22	34.74	-8.10	15.31	45.0
40.	.1193	.0469	58.43	34.08	-2.67	14.42	50.0
40.	.1172	.0472	63.00	35.12	-3.00	15.63	55.0
40.	.1139	.0492	58.49	30.34	-.18	20.02	60.0
40.	.1021	.0446	51.95	41.45	6.37	20.53	65.0
40.	.0835	.0447	44.61	34.36	6.08	20.48	70.0
40.	.0711	.0382	49.36	51.25	7.36	23.39	75.0
38.	.0602	.0300	40.37	59.41	14.24	27.67	80.0
37.	.0506	.0314	28.56	79.19	24.88	28.27	85.0
31.	.0401	.0222	-.78	99.03	55.64	42.05	90.0
21.	.0385	.0205	40.06	96.54	61.96	49.32	95.0
14.	.0427	.0186	-62.82	93.58	36.02	36.12	100.0
10.	.0519	.0211	-132.70	75.43	3.09	31.10	105.0
7.	.0267	.0109	-105.98	54.27	9.73	44.75	110.0
2.	.0297	.0031	-141.84	4.94	54.18	7.21	115.0



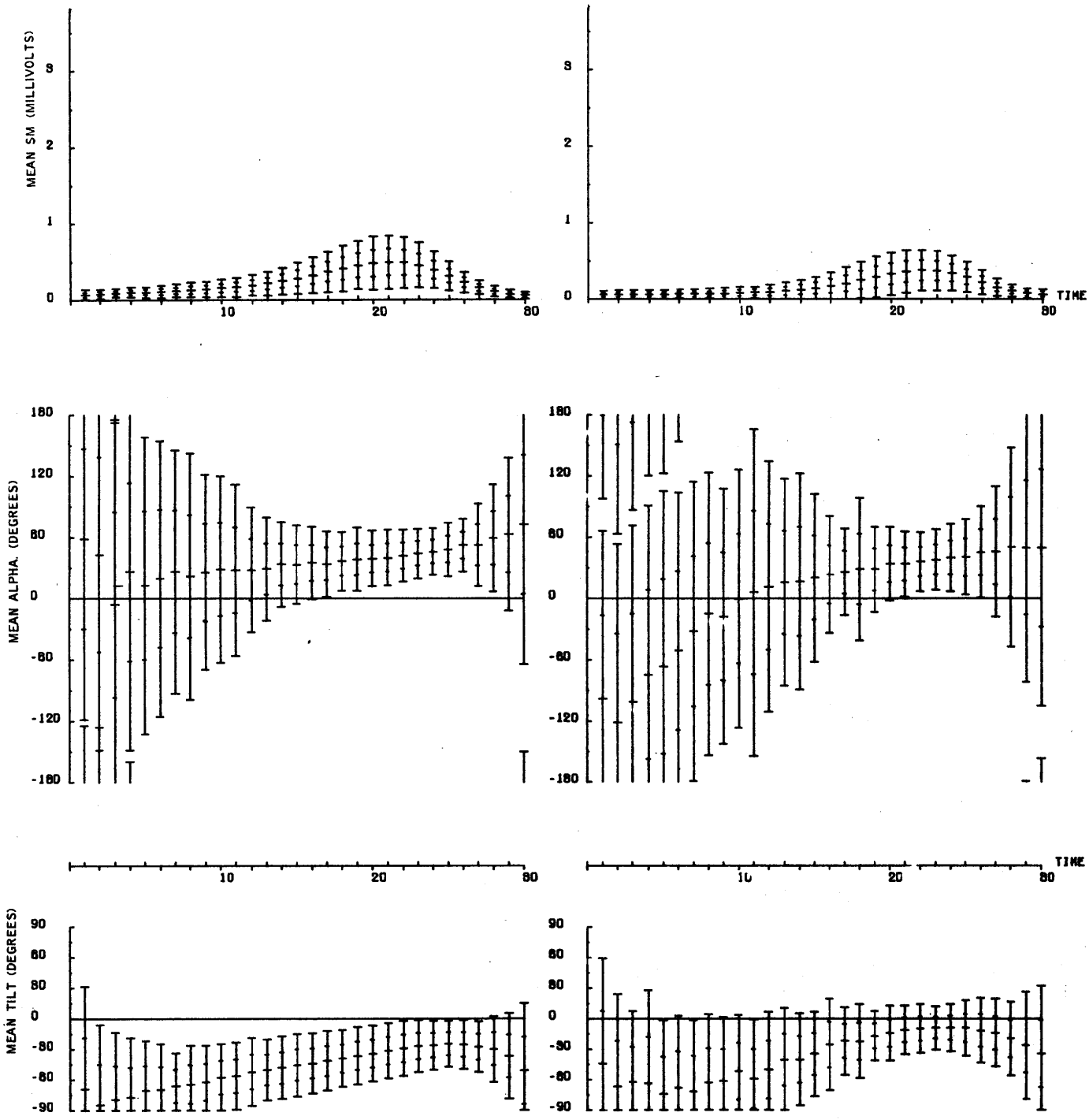
QRS WAVE
AGE 25 FRANK LEAD SYSTEM

QRS WAVE FOR MALE AGE 25 FRANK LEAD SYSTEM
AVERAGE AGE IS 24.8

N	SMAG	SDSM	ALPHA	SDA	TILT	SDT	TIME
43.	.0303	.0139	-119.97	71.83	-60.08	42.40	5.0
43.	.1165	.0509	-116.86	33.84	-51.75	18.31	10.0
43.	.2264	.0842	-120.47	49.40	-61.96	17.86	15.0
43.	.3037	.1210	-97.67	83.11	-79.60	20.58	20.0
43.	.4135	.1603	14.89	72.97	-72.06	17.28	25.0
43.	.6188	.2247	32.72	21.20	-43.18	17.74	30.0
43.	.9491	.2926	39.30	10.64	-16.58	12.92	35.0
43.	1.4172	.3582	45.51	9.77	.90	11.06	40.0
43.	1.7291	.3973	49.75	12.05	12.58	12.52	45.0
43.	1.7006	.5007	51.67	18.37	23.26	20.73	50.0
43.	1.4566	.4850	54.76	36.73	36.94	24.98	55.0
43.	1.0981	.4230	67.97	54.75	54.59	24.03	60.0
43.	.8139	.2885	104.11	66.05	68.84	22.75	65.0
43.	.5940	.2327	147.48	63.78	72.29	20.28	70.0
43.	.4293	.2256	168.96	56.12	68.46	23.54	75.0
42.	.2938	.1801	172.39	66.94	67.50	31.54	80.0
37.	.2016	.1224	168.57	76.07	67.99	45.99	85.0
30.	.1267	.0803	-133.82	101.87	73.83	65.98	90.0
18.	.1092	.0631	-105.19	98.15	-58.04	56.97	95.0
9.	.0981	.0291	98.62	114.51	-61.98	49.41	100.0
6.	.0692	.0329	89.11	53.48	-36.95	37.00	105.0
	TERMINAL VALUES AT 10 MS INTERVALS						
43.	1.4948	.5579	57.96	46.80	34.65	25.17	-40.0
43.	.9643	.4459	86.91	64.27	63.19	26.10	-30.0
43.	.5132	.2323	174.26	62.68	70.15	24.68	-20.0
43.	.2078	.1128	-174.17	82.55	73.74	46.33	-10.0

QRS WAVE FOR FEMALE AGE 25 FRANK LEAD SYSTEM
AVERAGE AGE IS 24.3

N	SMAG	SDSM	ALPHA	SDA	TILT	SDT	TIME
40.	.0340	.0160	-104.46	78.83	-56.48	42.48	5.0
40.	.1055	.0521	-115.34	68.17	-66.39	22.61	10.0
40.	.1991	.1015	-104.36	77.45	-73.17	22.58	15.0
40.	.2913	.1309	-14.01	80.64	-79.48	22.63	20.0
40.	.4061	.1602	20.32	53.61	-57.64	16.89	25.0
40.	.6061	.2531	33.78	23.89	-27.65	20.98	30.0
40.	.9589	.3367	41.25	12.23	-3.53	17.13	35.0
40.	1.2905	.3268	45.88	12.83	9.06	15.00	40.0
40.	1.4336	.4265	48.39	17.03	19.01	16.97	45.0
40.	1.2508	.4572	51.31	32.88	32.86	22.00	50.0
40.	.9418	.3366	63.34	58.83	56.20	24.96	55.0
40.	.6783	.2629	92.84	69.07	71.70	26.97	60.0
40.	.4777	.1999	159.33	69.58	76.32	26.29	65.0
40.	.3328	.1612	-172.35	69.46	73.12	34.30	70.0
38.	.2245	.1186	-172.08	67.43	65.78	40.49	75.0
34.	.1588	.1035	-141.74	82.26	65.53	45.58	80.0
22.	.1188	.0785	-122.41	71.44	49.40	39.57	85.0
13.	.0960	.0585	-169.40	63.43	12.58	35.07	90.0
6.	.0680	.0283	175.39	84.20	9.68	22.71	95.0
3.	.0462	.0007	-124.73	66.60	15.90	44.48	100.0
	TERMINAL VALUES AT 10 MS INTERVALS						
40.	1.2738	.3914	51.87	28.41	23.11	23.66	-40.0
40.	.8763	.4289	71.57	67.04	60.58	28.27	-30.0
40.	.4911	.2419	-178.06	62.23	70.81	26.17	-20.0
40.	.1877	.0901	-160.07	71.25	67.74	37.65	-10.0



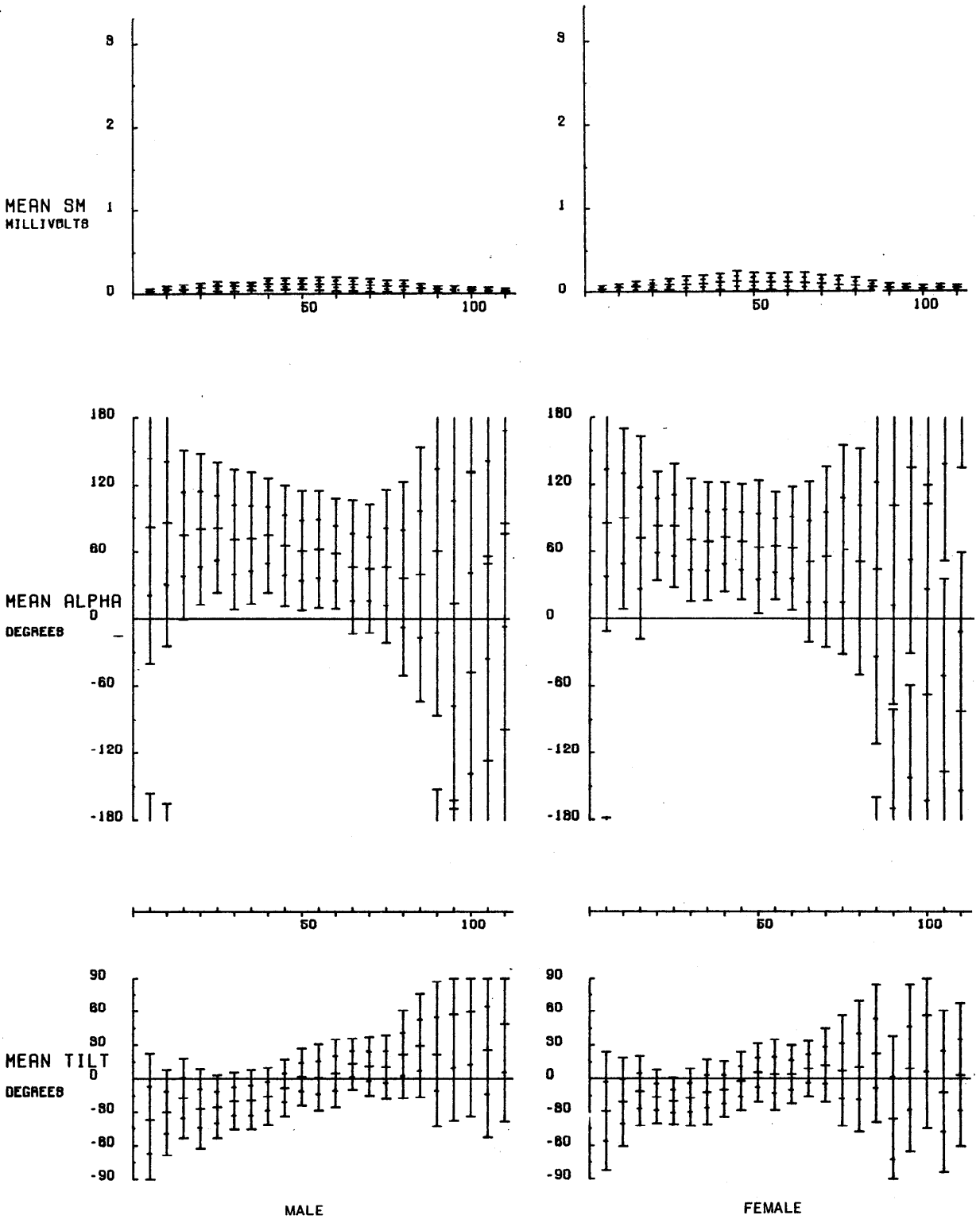
T WAVE
AGE 25 FRANK LEAD SYSTEM

T WAVE FOR MALE AGE 25 FRANK LEAD SYSTEM
AVERAGE AGE IS 24.8

N	SMAG	SDSM	ALPHA	SDA	TILT	SDT	TIME
43.	.0706	.0327	58.70	88.51	-69.10	50.25	2.0
43.	.0794	.0315	42.91	95.71	-84.95	39.61	4.0
43.	.0904	.0276	-6.14	90.71	-79.26	32.71	6.0
43.	.1016	.0333	25.92	87.28	-77.32	29.20	8.0
43.	.1046	.0350	12.88	72.75	-70.70	24.35	10.0
43.	.1143	.0398	19.70	67.42	-69.98	22.51	12.0
43.	.1217	.0421	26.24	59.79	-66.18	16.34	14.0
43.	.1332	.0487	21.70	60.31	-64.41	19.03	16.0
43.	.1434	.0502	25.83	47.96	-62.08	17.99	18.0
43.	.1564	.0559	28.32	45.80	-57.68	16.30	20.0
43.	.1685	.0626	27.78	42.07	-56.11	16.54	22.0
43.	.1932	.0690	28.06	30.48	-52.13	16.68	24.0
43.	.2154	.0785	28.98	25.30	-50.33	15.04	26.0
43.	.2467	.0886	33.48	20.72	-48.25	15.39	28.0
43.	.2840	.1017	33.33	19.31	-45.60	15.30	30.0
43.	.3245	.1154	34.96	17.88	-44.03	14.74	32.0
43.	.3691	.1324	34.00	16.13	-41.35	14.60	34.0
43.	.4110	.1480	36.55	14.37	-39.15	13.76	36.0
43.	.4526	.1582	38.48	15.58	-36.43	13.90	38.0
43.	.4772	.1742	39.23	13.60	-34.15	13.51	40.0
43.	.4917	.1754	40.03	13.75	-31.79	13.52	42.0
43.	.4853	.1685	41.73	12.71	-29.24	13.37	44.0
43.	.4548	.1478	44.04	12.09	-27.21	12.72	46.0
43.	.3896	.1210	46.01	11.37	-26.20	12.02	48.0
43.	.3090	.0931	48.23	13.09	-24.76	11.08	50.0
43.	.2261	.0659	52.18	12.95	-25.57	11.88	52.0
43.	.1576	.0450	52.56	20.31	-27.76	12.42	54.0
43.	.1065	.0355	59.26	26.30	-29.82	16.11	56.0
43.	.0717	.0281	62.77	37.56	-36.80	21.04	58.0
43.	.0572	.0235	72.66	68.51	-51.12	33.00	60.0

T WAVE FOR FEMALE AGE 25 FRANK LEAD SYSTEM
AVERAGE AGE IS 24.3

N	SMAG	SDSM	ALPHA	SDA	TILT	SDT	TIME
40.	.0562	.0284	-98.38	82.13	-43.95	51.50	2.0
40.	.0600	.0321	-121.82	87.51	-67.06	45.41	4.0
40.	.0615	.0308	-101.32	86.12	-62.55	34.91	6.0
40.	.0636	.0294	-74.71	82.65	-63.49	45.56	8.0
40.	.0627	.0306	-66.67	85.68	-74.16	36.46	10.0
40.	.0697	.0322	-51.22	77.53	-67.99	35.41	12.0
40.	.0659	.0341	-32.31	73.34	-71.94	35.29	14.0
40.	.0707	.0322	-15.23	69.21	-62.66	33.41	16.0
40.	.0743	.0374	-17.79	62.54	-61.35	31.46	18.0
40.	.0794	.0394	-.43	63.34	-52.07	27.80	20.0
40.	.0873	.0388	5.63	80.16	-59.17	29.04	22.0
40.	.0923	.0477	11.48	61.40	-50.07	28.59	24.0
40.	.1061	.0544	15.68	50.59	-40.49	25.49	26.0
40.	.1215	.0641	16.52	52.98	-40.31	22.72	28.0
40.	.1430	.0740	20.14	41.04	-34.87	20.93	30.0
40.	.1744	.0901	23.25	28.65	-25.76	22.49	32.0
40.	.2048	.1082	25.69	21.12	-22.05	16.61	34.0
40.	.2493	.1203	28.44	34.77	-22.15	18.03	36.0
40.	.2903	.1361	28.28	20.75	-17.08	12.23	38.0
40.	.3301	.1384	33.97	18.02	-14.21	13.36	40.0
40.	.3594	.1379	33.52	16.03	-11.12	11.99	42.0
40.	.3750	.1342	35.89	14.48	-9.85	11.91	44.0
40.	.3716	.1305	37.86	14.82	-9.09	10.67	46.0
40.	.3436	.1147	39.69	16.43	-8.95	11.74	48.0
40.	.2895	.0986	40.40	18.37	-9.37	13.54	50.0
40.	.2220	.0792	45.15	22.31	-11.77	16.02	52.0
40.	.1548	.0565	45.59	31.93	-14.11	16.70	54.0
40.	.1095	.0406	50.41	48.77	-19.74	18.22	56.0
40.	.0755	.0339	49.60	65.58	-26.52	26.52	58.0
40.	.0636	.0335	49.18	77.17	-34.56	33.24	60.0



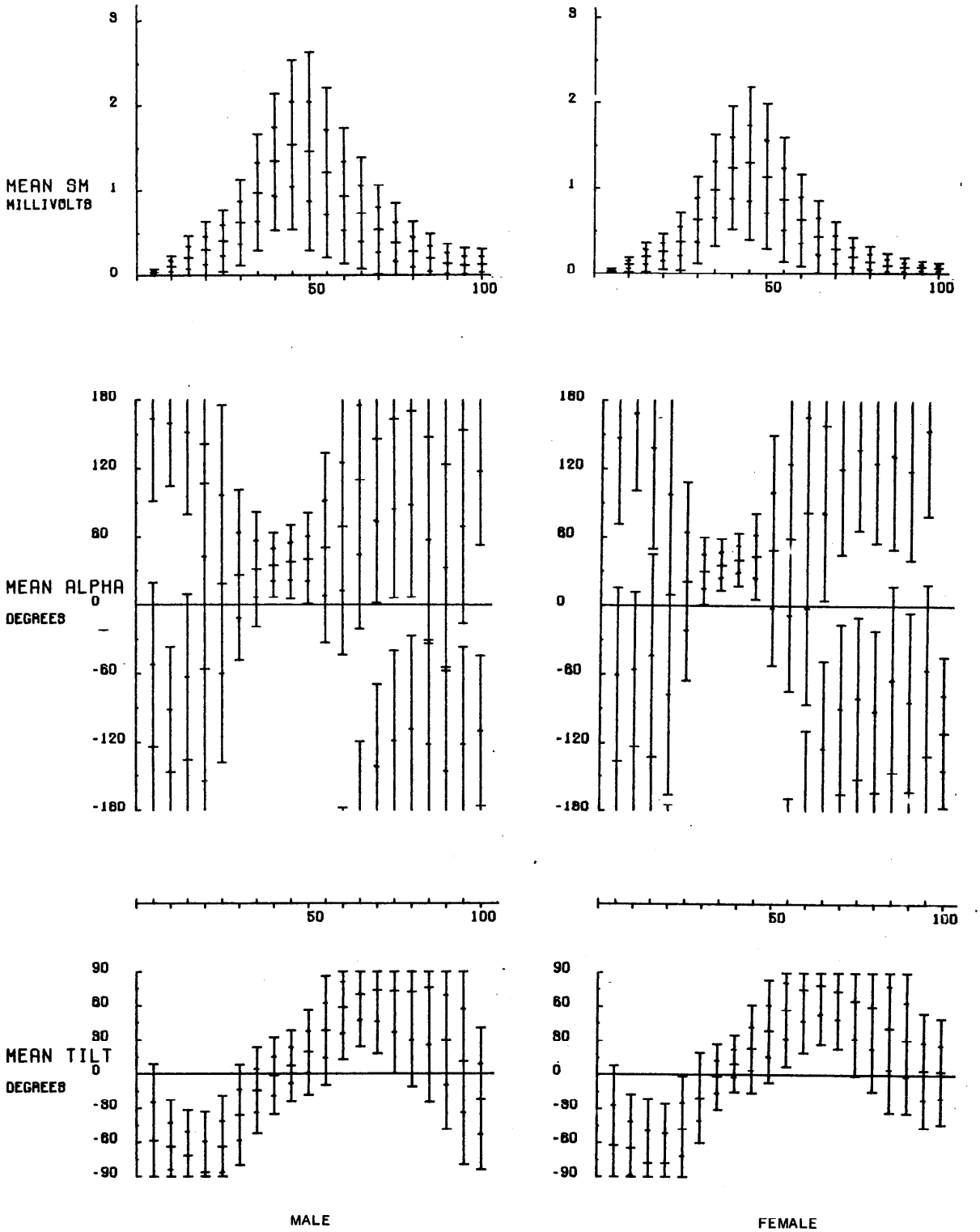
P WAVE
AGE 35 FRANK LEAD SYSTEM

P WAVE FOR MALE AGE 35 FRANK LEAD SYSTEM
AVERAGE AGE IS 35.3

N	SMAG	SDSM	ALPHA	SDA	TILT	SDT	TIME
56.	.0300	.0154	81.90	61.18	-36.85	29.80	5.0
56.	.0466	.0215	85.19	54.83	-30.32	19.05	10.0
56.	.0541	.0270	75.20	37.93	-17.43	17.85	15.0
56.	.0725	.0303	80.14	33.73	-26.85	17.52	20.0
56.	.0895	.0304	81.19	29.06	-25.33	14.12	25.0
56.	.0861	.0287	71.00	31.20	-20.19	12.75	30.0
56.	.0902	.0265	72.05	29.42	-19.27	13.39	35.0
56.	.1164	.0387	74.90	25.70	-15.59	12.78	40.0
56.	.1191	.0366	65.85	27.22	-8.57	12.76	45.0
56.	.1191	.0359	60.87	26.85	1.81	12.72	50.0
56.	.1173	.0405	62.25	26.40	.99	14.75	55.0
56.	.1148	.0406	58.55	24.69	4.84	15.15	60.0
56.	.1075	.0401	46.27	29.98	13.16	11.47	65.0
56.	.0991	.0406	45.04	28.76	11.19	13.16	70.0
56.	.0877	.0344	46.61	34.34	10.28	14.27	75.0
56.	.0785	.0386	35.89	43.50	21.66	19.60	80.0
56.	.0585	.0299	39.74	57.11	29.48	22.98	85.0
54.	.0494	.0221	60.78	73.40	21.96	32.53	90.0
52.	.0434	.0227	14.04	92.00	56.64	47.24	95.0
41.	.0374	.0175	-48.32	89.85	59.30	46.61	100.0
35.	.0335	.0184	-126.97	91.69	25.76	38.97	105.0
23.	.0338	.0130	-99.09	92.24	48.58	43.56	110.0
12.	.0466	.0207	-108.94	63.07	36.99	44.64	115.0
8.	.0423	.0207	-118.21	26.93	14.88	29.31	120.0
6.	.0443	.0241	-114.96	29.49	11.21	22.11	125.0

P WAVE FOR FEMALE AGE 35 FRANK LEAD SYSTEM
AVERAGE AGE IS 35.3

N	SMAG	SDSM	ALPHA	SDA	TILT	SDT	TIME
46.	.0338	.0229	85.11	48.01	-29.56	26.61	5.0
46.	.0474	.0275	89.15	40.51	-20.76	19.88	10.0
46.	.0572	.0363	71.96	45.43	-11.44	15.83	15.0
46.	.0813	.0318	82.66	24.28	-16.52	12.14	20.0
46.	.0910	.0357	82.83	27.59	-20.33	10.41	25.0
46.	.0910	.0474	70.60	27.33	-17.09	12.99	30.0
46.	.1006	.0507	69.25	26.36	-11.79	14.64	35.0
46.	.1203	.0518	73.12	24.59	-9.63	12.57	40.0
46.	.1250	.0620	69.16	25.80	-2.28	13.25	45.0
46.	.1231	.0522	64.08	29.76	5.40	13.17	50.0
46.	.1222	.0499	65.06	24.06	3.51	16.05	55.0
46.	.1184	.0559	63.19	27.78	3.61	13.13	60.0
46.	.1109	.0592	51.30	36.01	9.02	12.51	65.0
46.	.0972	.0526	55.21	40.34	11.97	16.53	70.0
46.	.0834	.0533	61.57	46.67	6.64	24.86	75.0
44.	.0659	.0506	50.90	50.62	10.87	29.43	80.0
43.	.0520	.0371	44.12	77.97	22.53	30.65	85.0
37.	.0404	.0295	101.11	88.91	-35.84	37.05	90.0
32.	.0417	.0264	135.22	82.80	9.16	37.26	95.0
20.	.0333	.0257	-68.29	94.33	56.59	50.83	100.0
17.	.0393	.0243	-136.43	85.75	-11.78	36.28	105.0
9.	.0370	.0224	-82.68	71.09	3.17	32.00	110.0
4.	.0352	.0139	-56.12	53.05	-20.51	42.79	115.0
2.	.0369	.0173	118.86	56.28	-43.94	22.05	120.0
2.	.0329	.0189	-135.09	58.55	32.21	45.99	125.0



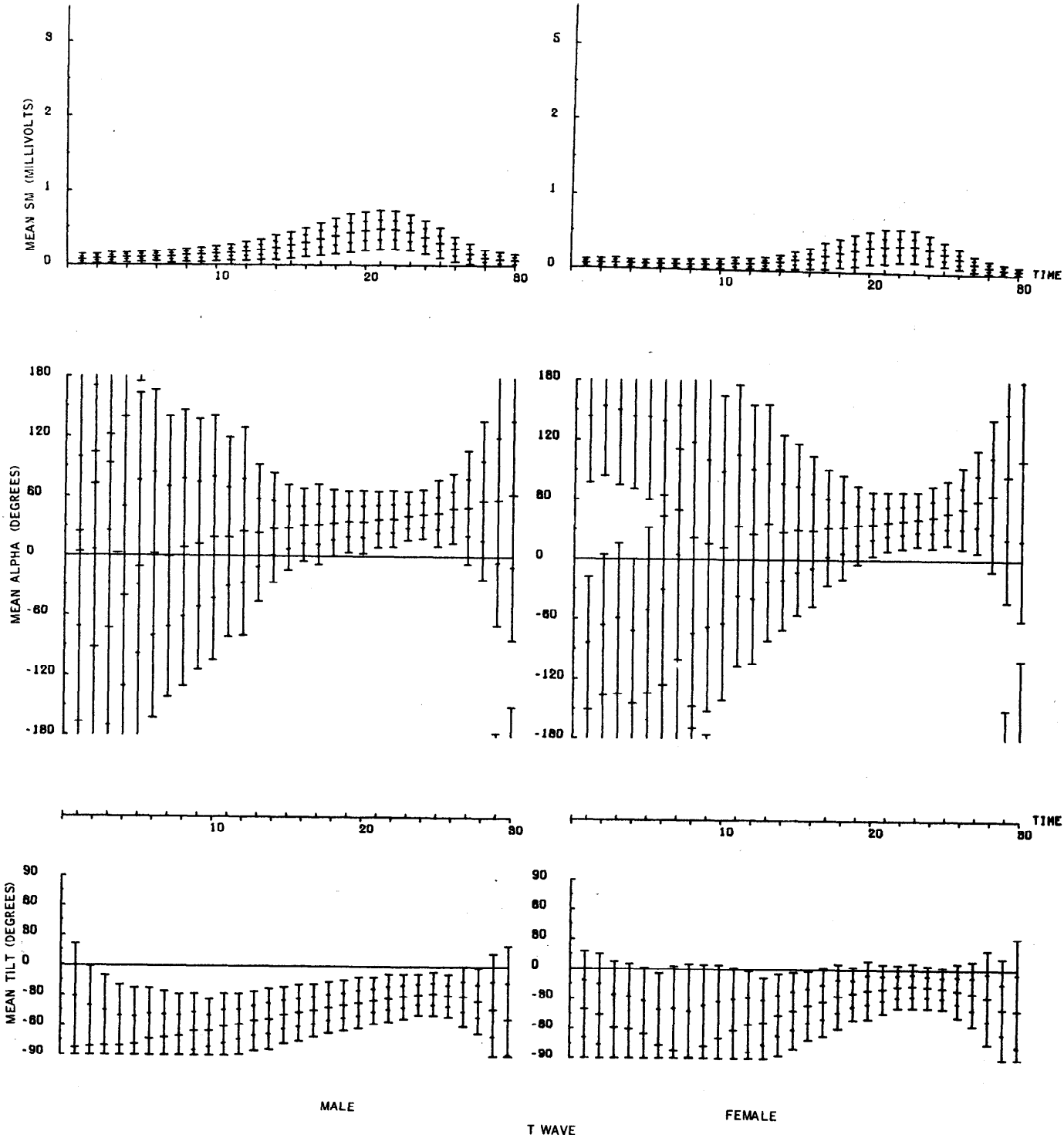
QRS WAVE
AGE 35 FRANK LEAD SYSTEM

QRS WAVE FOR MALE AGE 35 FRANK LEAD SYSTEM
AVERAGE AGE IS 35.3

N	SMAG	SDSM	ALPHA	SDA	TILT	SDT	TIME
56.	.0396	.0205	-124.21	72.03	-58.73	33.98	5.0
56.	.1145	.0601	-146.08	54.68	-63.64	20.68	10.0
56.	.2117	.1298	-135.67	72.59	-71.12	19.95	15.0
56.	.2959	.1649	-55.94	98.72	-86.29	26.76	20.0
56.	.4119	.1809	18.50	78.41	-63.95	22.66	25.0
56.	.6212	.2522	26.22	37.62	-35.98	22.26	30.0
56.	.9739	.3443	31.48	25.01	-14.58	18.94	35.0
56.	1.3379	.4029	35.41	14.34	-1.59	16.90	40.0
56.	1.5409	.4983	37.90	16.48	7.48	15.57	45.0
56.	1.4550	.5850	40.84	20.07	19.23	18.60	50.0
56.	1.2070	.5002	50.16	41.71	38.25	23.93	55.0
56.	.9317	.3976	69.12	56.45	58.31	22.67	60.0
56.	.7290	.3247	110.03	65.45	69.63	22.74	65.0
56.	.5356	.2621	146.22	72.37	73.61	27.73	70.0
56.	.3915	.2270	163.18	78.66	73.01	36.46	75.0
53.	.2764	.1784	169.92	81.56	71.85	41.66	80.0
51.	.1960	.1475	147.96	90.68	75.42	50.18	85.0
45.	.1390	.1179	123.60	90.76	29.69	39.18	90.0
29.	.1166	.1007	153.51	84.77	11.60	45.62	95.0
13.	.1271	.0910	-176.19	65.82	-21.96	31.20	100.0
7.	.1086	.0726	-128.53	59.43	-42.50	37.43	105.0
3.	.0930	.0508	-120.15	22.37	-19.33	36.08	110.0
2.	.0347	.0110	-148.31	20.54	-12.60	53.77	115.0
	TERMINAL VALUES AT 10 MS INTERVALS						
56.	1.2334	.5118	53.05	50.20	38.73	24.21	-40.0
56.	.7856	.3656	95.13	70.39	70.97	25.80	-30.0
56.	.4014	.1782	171.67	78.58	73.88	33.16	-20.0
56.	.1593	.0715	171.58	84.96	73.60	53.56	-10.0

QRS WAVE FOR FEMALE AGE 35 FRANK LEAD SYSTEM
AVERAGE AGE IS 35.4

N	SMAG	SDSM	ALPHA	SDA	TILT	SDT	TIME
47.	.0340	.0144	-136.60	76.16	-62.48	35.44	5.0
47.	.1064	.0432	-123.77	67.84	-64.86	23.69	10.0
47.	.1975	.0870	-132.70	88.84	-78.13	28.58	15.0
47.	.2582	.1041	9.83	87.84	-77.78	26.28	20.0
47.	.3838	.1703	21.36	43.20	-47.96	23.08	25.0
47.	.6298	.2553	30.07	14.78	-20.28	20.01	30.0
47.	.9776	.3284	35.65	11.25	-1.58	14.46	35.0
47.	1.2396	.3595	40.59	11.71	10.08	12.58	40.0
47.	1.2956	.4473	43.22	18.88	22.93	19.17	45.0
47.	1.1385	.4261	48.67	50.70	38.73	22.64	50.0
47.	.8730	.3648	58.26	66.53	56.81	24.51	55.0
47.	.6291	.2683	81.83	84.21	75.14	27.94	60.0
47.	.4360	.2113	158.07	76.73	78.66	25.78	65.0
47.	.2852	.1645	-165.08	74.83	73.80	25.32	70.0
43.	.1967	.1165	-151.91	70.91	65.21	32.80	75.0
35.	.1426	.0876	-163.44	71.01	60.15	37.18	80.0
28.	.1036	.0699	-146.62	81.77	41.31	36.98	85.0
16.	.0785	.0537	-162.75	78.55	31.11	32.31	90.0
8.	.0784	.0353	-131.44	75.00	3.55	25.18	95.0
5.	.0660	.0307	-111.18	33.03	3.07	23.36	100.0
3.	.0428	.0196	-78.95	42.33	-27.26	43.83	105.0
	TERMINAL VALUES AT 10 MS INTERVALS						
47.	1.0956	.4215	43.44	52.73	30.68	25.64	-40.0
47.	.8507	.4470	62.06	82.24	66.48	32.26	-30.0
47.	.4595	.2992	178.39	80.58	79.88	32.06	-20.0
47.	.1604	.0871	-151.36	78.04	64.97	34.08	-10.0



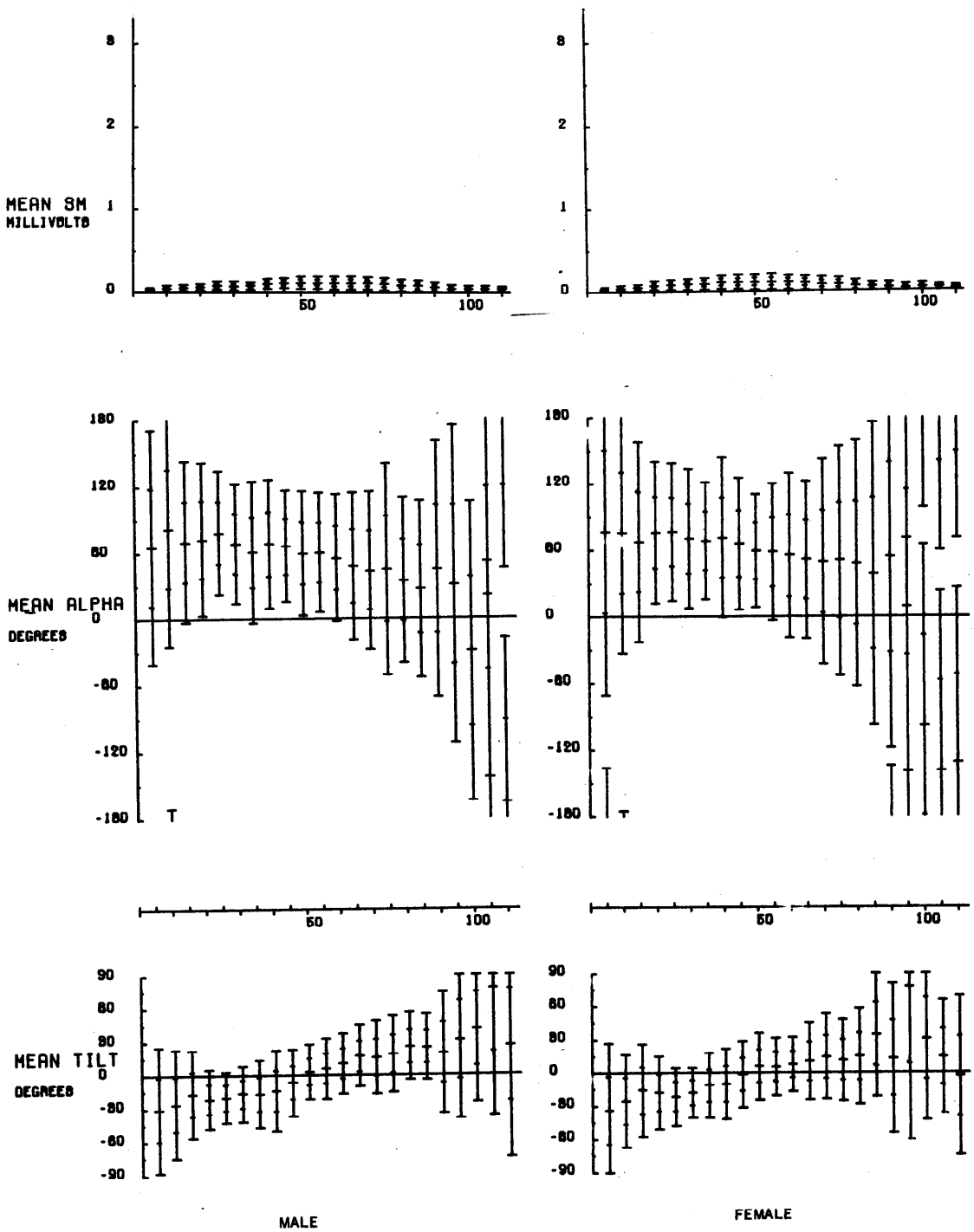
T WAVE
AGE 35 FRANK LEAD SYSTEM

T WAVE FOR MALE AGE 35 FRANK LEAD SYSTEM
AVERAGE AGE IS 35.3

N	SMAG	SDSM	ALPHA	SDA	TILT	SDT	TIME
56.	.0731	.0311	-166.21	95.02	-82.61	51.84	2.0
56.	.0796	.0296	-92.08	97.85	-80.71	40.13	4.0
56.	.0895	.0343	-72.75	97.17	-79.93	34.80	6.0
56.	.0977	.0319	-40.58	90.03	-80.57	30.36	8.0
56.	.1036	.0329	-11.43	86.95	-78.69	27.98	10.0
56.	.1122	.0330	1.93	81.79	-73.76	25.63	12.0
56.	.1129	.0408	-.78	70.47	-71.69	23.09	14.0
56.	.1269	.0429	7.98	69.24	-70.50	21.01	16.0
56.	.1354	.0473	11.77	62.80	-65.42	18.81	18.0
56.	.1464	.0506	18.43	61.35	-65.37	15.90	20.0
56.	.1623	.0529	18.98	50.06	-61.02	16.59	22.0
56.	.1830	.0614	24.79	52.16	-58.46	15.22	24.0
56.	.2018	.0676	23.02	34.52	-54.93	14.83	26.0
56.	.2322	.0825	28.12	27.61	-52.91	15.24	28.0
56.	.2657	.0861	28.75	21.61	-48.86	14.10	30.0
56.	.3027	.0959	31.52	18.54	-46.84	13.91	32.0
56.	.3484	.1079	32.18	20.30	-44.27	13.19	34.0
56.	.3882	.1187	33.52	16.89	-41.44	12.78	36.0
56.	.4320	.1294	35.11	15.61	-39.33	12.64	38.0
56.	.4582	.1316	34.91	15.81	-37.00	12.74	40.0
56.	.4757	.1325	37.61	14.37	-34.38	11.69	42.0
56.	.4685	.1307	38.41	14.19	-32.01	11.76	44.0
56.	.4402	.1202	41.15	12.45	-30.12	11.03	46.0
56.	.3746	.1143	42.54	12.39	-28.27	10.19	48.0
56.	.3007	.1020	44.07	16.63	-27.22	10.75	50.0
56.	.2161	.0817	48.46	17.57	-29.06	10.45	52.0
56.	.1524	.0670	49.34	28.42	-29.92	14.98	54.0
56.	.1034	.0508	56.49	40.00	-34.21	16.25	56.0
56.	.0793	.0507	56.87	63.04	-42.51	27.46	58.0
56.	.0665	.0437	62.80	73.55	-52.51	36.20	60.0

T WAVE FOR FEMALE AGE 35 FRANK LEAD SYSTEM
AVERAGE AGE IS 35.4

N	SMAG	SDSM	ALPHA	SDA	TILT	SDT	TIME
47.	.0637	.0268	-150.63	66.26	-40.25	28.60	2.0
47.	.0681	.0328	-136.15	70.36	-45.69	30.38	4.0
47.	.0674	.0376	-134.94	75.39	-59.01	33.15	6.0
47.	.0654	.0263	-144.62	72.34	-60.89	33.09	8.0
47.	.0661	.0283	-133.88	83.03	-65.10	33.22	10.0
47.	.0686	.0305	-126.03	95.34	-76.51	36.05	12.0
47.	.0678	.0307	-100.25	105.07	-81.78	42.42	14.0
47.	.0746	.0323	21.77	95.71	-89.19	47.05	16.0
47.	.0732	.0314	15.67	83.95	-77.19	40.85	18.0
47.	.0823	.0321	11.78	76.37	-69.19	37.03	20.0
47.	.0864	.0414	34.09	70.63	-61.17	31.41	22.0
47.	.0891	.0365	25.58	64.96	-55.77	27.19	24.0
47.	.1057	.0388	37.06	59.49	-53.03	22.36	26.0
47.	.1185	.0470	27.56	48.90	-45.78	20.60	28.0
47.	.1478	.0564	30.28	43.09	-41.32	19.25	30.0
47.	.1742	.0693	29.01	37.60	-36.01	17.24	32.0
47.	.2118	.0867	32.09	29.15	-32.50	17.21	34.0
47.	.2505	.0957	32.72	25.96	-26.33	16.34	36.0
47.	.2872	.1040	34.92	19.75	-23.61	13.48	38.0
47.	.3258	.1070	36.22	16.10	-20.20	14.61	40.0
47.	.3499	.1132	38.45	14.71	-18.65	12.37	42.0
47.	.3642	.1098	39.75	14.35	-16.52	10.90	44.0
47.	.3557	.1060	41.04	13.63	-15.65	11.14	46.0
47.	.3166	.0991	43.37	15.59	-16.64	10.68	48.0
47.	.2582	.0815	47.44	16.07	-18.18	10.58	50.0
47.	.1967	.0648	52.12	20.54	-20.27	13.66	52.0
47.	.1358	.0504	59.14	25.72	-23.56	16.37	54.0
47.	.0989	.0396	64.97	38.07	-27.41	23.41	56.0
47.	.0729	.0334	84.19	62.91	-38.95	25.54	58.0
47.	.0600	.0265	99.41	80.03	-40.78	36.11	60.0



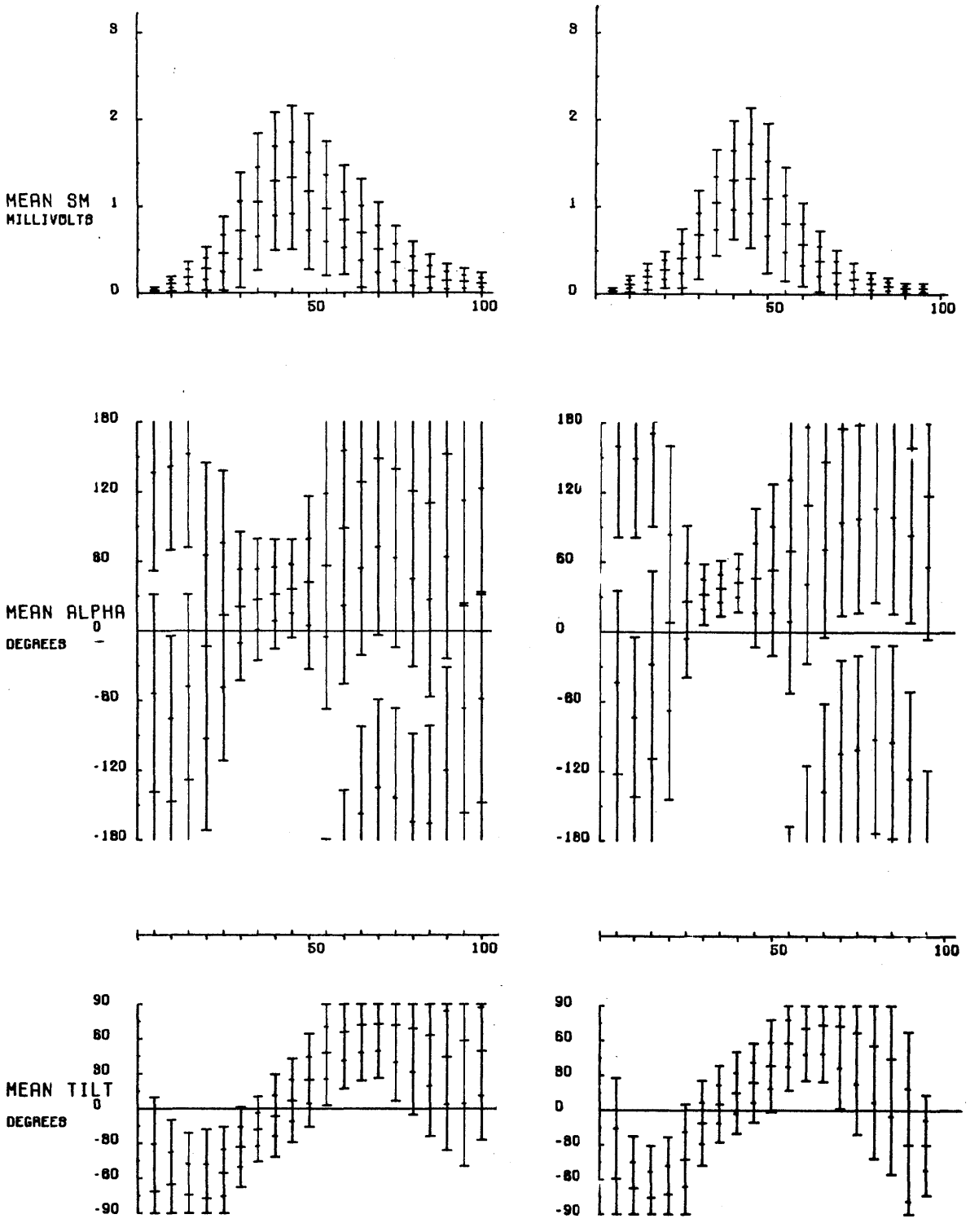
P WAVE
AGE 45 FRANK LEAD SYSTEM

P WAVE FOR MALE AGE 45 FRANK LEAD SYSTEM
AVERAGE AGE IS 45.0

N	SMAG	SDSM	ALPHA	SDA	TILT	SDT	TIME
48.	.0286	.0123	65.10	52.99	-30.84	28.28	5.0
48.	.0429	.0197	82.09	53.39	-26.03	24.52	10.0
48.	.0502	.0200	70.08	36.40	-16.99	19.76	15.0
48.	.0591	.0212	72.23	34.70	-21.44	13.25	20.0
48.	.0790	.0233	78.30	27.90	-20.05	11.45	25.0
48.	.0738	.0260	68.60	27.01	-16.85	12.66	30.0
48.	.0775	.0217	60.51	31.95	-17.17	15.19	35.0
48.	.0981	.0302	67.94	29.19	-13.96	18.05	40.0
48.	.1086	.0310	65.88	25.13	-6.94	14.97	45.0
48.	.1125	.0366	59.26	28.10	2.97	12.32	50.0
48.	.1146	.0360	59.85	26.94	5.75	13.62	55.0
48.	.1119	.0385	55.12	28.68	10.28	13.66	60.0
48.	.1070	.0405	47.78	33.24	17.07	13.85	65.0
48.	.1055	.0378	43.67	35.72	15.68	16.60	70.0
48.	.0971	.0383	44.85	47.88	18.72	17.19	75.0
47.	.0834	.0358	34.75	37.31	25.63	15.17	80.0
45.	.0750	.0313	26.65	39.81	25.08	14.74	85.0
45.	.0600	.0285	45.25	57.74	19.80	27.15	90.0
45.	.0434	.0226	30.82	71.66	31.41	35.25	95.0
37.	.0420	.0194	-29.34	67.54	41.21	33.01	100.0
28.	.0379	.0198	-143.39	97.73	78.11	57.38	105.0
21.	.0372	.0180	-165.48	74.20	26.41	50.69	110.0
12.	.0433	.0203	-45.69	68.46	54.31	27.41	115.0
3.	.0219	.0071	-137.91	63.26	-44.64	22.04	120.0
2.	.0293	.0027	-174.83	42.57	5.99	21.93	125.0

P WAVE FOR FEMALE AGE 45 FRANK LEAD SYSTEM
AVERAGE AGE IS 44.4

N	SMAG	SDSM	ALPHA	SDA	TILT	SDT	TIME
58.	.0306	.0132	76.86	73.75	-33.85	30.51	5.0
58.	.0417	.0172	75.76	54.43	-25.72	20.93	10.0
58.	.0523	.0199	67.79	45.06	-15.65	21.05	15.0
58.	.0729	.0269	75.87	32.01	-18.28	16.46	20.0
58.	.0820	.0295	76.53	30.97	-21.61	13.10	25.0
58.	.0879	.0316	70.61	31.45	-18.30	11.28	30.0
58.	.0930	.0355	68.57	26.54	-11.35	14.60	35.0
58.	.1092	.0401	71.40	36.19	-10.17	15.90	40.0
58.	.1117	.0417	65.80	29.90	-1.57	14.99	45.0
58.	.1135	.0453	59.33	25.59	5.78	15.14	50.0
58.	.1148	.0479	58.20	30.91	5.32	13.22	55.0
58.	.1085	.0420	55.40	37.11	7.52	12.25	60.0
58.	.0982	.0420	51.51	35.40	10.23	17.46	65.0
58.	.0840	.0408	49.68	46.34	14.43	19.34	70.0
57.	.0757	.0399	50.81	51.98	11.55	18.39	75.0
55.	.0594	.0353	48.29	55.57	14.75	21.58	80.0
51.	.0494	.0267	39.29	68.22	34.81	28.46	85.0
46.	.0434	.0280	53.65	85.97	12.98	34.04	90.0
42.	.0349	.0230	-139.79	105.45	78.12	69.53	95.0
31.	.0361	.0250	-97.91	81.42	30.52	36.75	100.0
18.	.0355	.0182	-138.38	80.80	14.37	25.52	105.0
12.	.0309	.0125	-131.37	78.66	-3.19	36.00	110.0
7.	.0427	.0155	-145.73	88.44	37.89	42.46	115.0
5.	.0254	.0069	-102.93	60.11	19.98	25.97	120.0
4.	.0251	.0112	-144.09	8.61	25.86	5.92	125.0



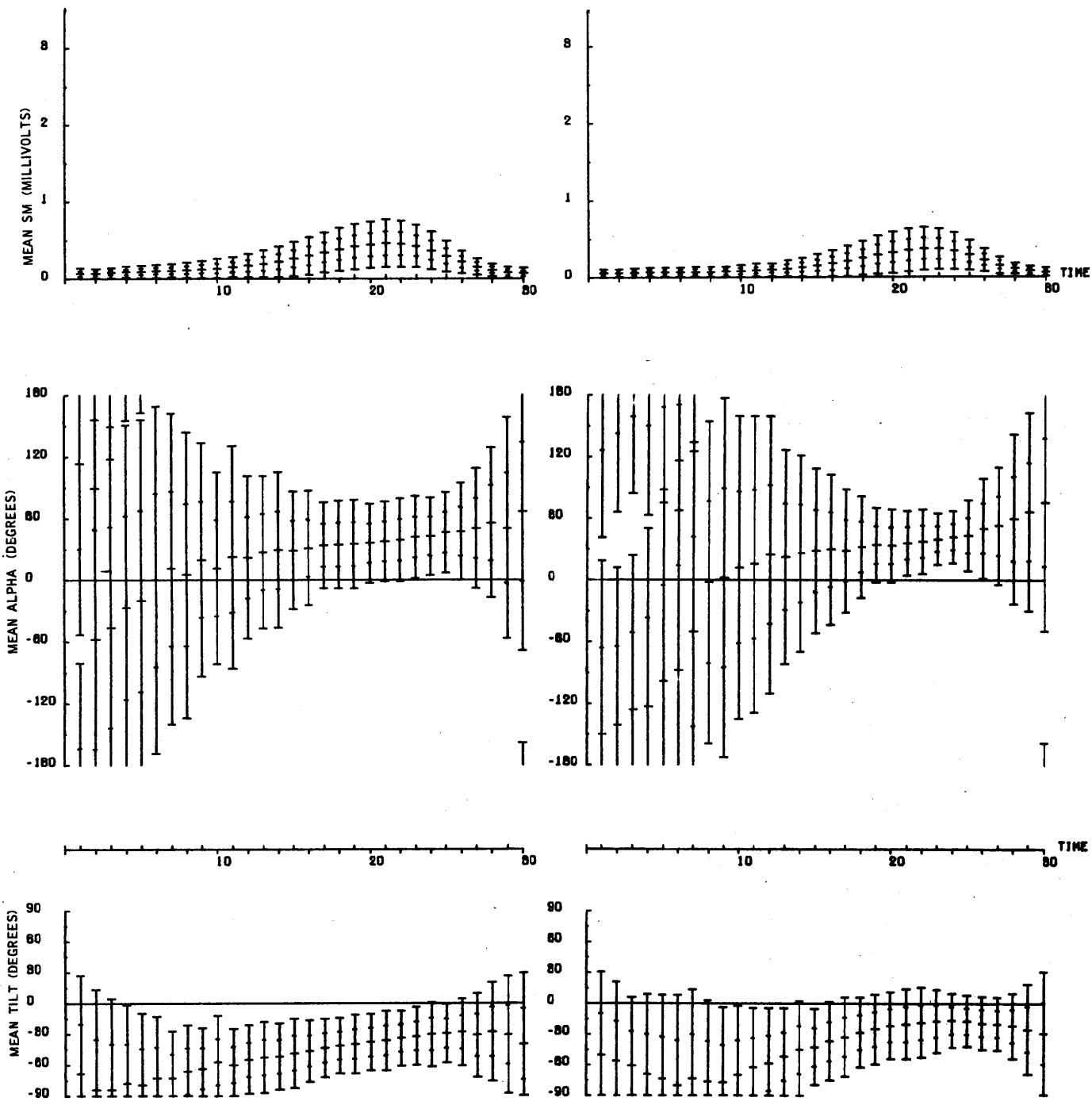
QRS WAVE
AGE 45 FRANK LEAD SYSTEM

QRS WAVE FOR MALE AGE 45 FRANK LEAD SYSTEM
AVERAGE AGE IS 45.0

N	SMAG	SDSM	ALPHA	SDA	TILT	SDT	TIME
48.	.0349	.0161	-138.52	84.83	-71.42	40.42	5.0
48.	.1053	.0448	-147.25	71.36	-65.43	27.79	10.0
48.	.1849	.0864	-128.08	79.88	-74.47	26.81	15.0
48.	.2772	.1259	-13.65	79.06	-77.23	29.52	20.0
48.	.4561	.2116	13.41	62.42	-55.46	19.90	25.0
48.	.7239	.3315	21.37	31.98	-33.03	17.09	30.0
48.	1.0496	.3971	27.31	26.27	-17.75	14.17	35.0
48.	1.2888	.3975	31.48	23.47	-6.39	17.92	40.0
48.	1.3293	.4152	36.29	21.06	6.88	18.09	45.0
48.	1.1706	.4518	41.82	37.33	24.56	20.02	50.0
48.	.9737	.3869	56.58	62.09	48.05	22.47	55.0
48.	.8406	.3163	88.47	66.97	65.79	24.36	60.0
48.	.6868	.3127	128.32	74.48	71.94	23.88	65.0
48.	.4983	.2693	148.54	76.16	73.12	23.52	70.0
47.	.3461	.2111	139.62	76.75	72.13	32.68	75.0
44.	.2509	.1675	120.45	75.61	68.85	37.04	80.0
39.	.1811	.1320	110.56	83.81	63.04	43.36	85.0
31.	.1388	.0968	152.02	88.09	43.97	40.06	90.0
17.	.1253	.0777	-156.92	90.50	58.86	54.20	95.0
10.	.1146	.0573	-147.55	89.37	49.25	38.07	100.0
6.	.0976	.0442	140.98	100.69	-38.83	40.43	105.0
3.	.1071	.0356	-136.58	82.67	-47.04	14.66	110.0
	TERMINAL VALUES AT 10 MS INTERVALS						
48.	1.1409	.4428	49.39	58.24	34.66	26.42	-40.0
48.	.8009	.3203	82.49	81.44	68.43	28.43	-30.0
48.	.4457	.1737	159.99	68.36	73.84	25.71	-20.0
48.	.1820	.0810	156.46	79.65	66.69	41.37	-10.0

QRS WAVE FOR FEMALE AGE 45 FRANK LEAD SYSTEM
AVERAGE AGE IS 44.4

N	SMAG	SDSM	ALPHA	SDA	TILT	SDT	TIME
60.	.0350	.0169	-121.94	78.61	-59.31	43.48	5.0
60.	.1127	.0475	-141.93	68.58	-67.66	22.66	10.0
60.	.2006	.0732	-108.47	80.42	-76.05	22.58	15.0
60.	.2798	.1070	8.30	75.98	-72.43	24.71	20.0
60.	.4108	.1687	26.45	32.70	-42.45	23.85	25.0
60.	.6780	.2546	32.34	13.00	-11.27	18.29	30.0
60.	1.0484	.3052	37.57	12.15	5.40	16.46	35.0
60.	1.3140	.3402	42.46	12.52	14.86	17.65	40.0
60.	1.3309	.4027	46.71	29.84	23.94	17.05	45.0
60.	1.0991	.4310	53.54	36.93	38.43	19.95	50.0
60.	.8060	.3290	70.04	61.23	57.66	20.30	55.0
60.	.5718	.2412	109.25	67.99	70.25	22.56	60.0
60.	.3794	.1737	146.85	75.77	73.40	24.48	65.0
60.	.2467	.1305	175.20	80.55	72.38	35.30	70.0
55.	.1680	.0939	178.15	80.73	66.88	44.03	75.0
47.	.1155	.0689	-173.08	80.57	55.31	48.57	80.0
30.	.0908	.0511	-178.03	83.26	44.21	49.79	85.0
17.	.0690	.0315	158.64	75.23	-30.04	48.83	90.0
10.	.0711	.0276	117.91	61.83	-30.05	21.75	95.0
	TERMINAL VALUES AT 10 MS INTERVALS						
60.	1.2100	.4239	49.36	41.87	28.10	22.28	-40.0
60.	.8822	.4759	71.46	63.84	55.96	22.71	-30.0
60.	.4352	.2285	152.44	76.26	76.54	30.55	-20.0
60.	.1630	.0667	176.75	77.60	67.52	43.75	-10.0



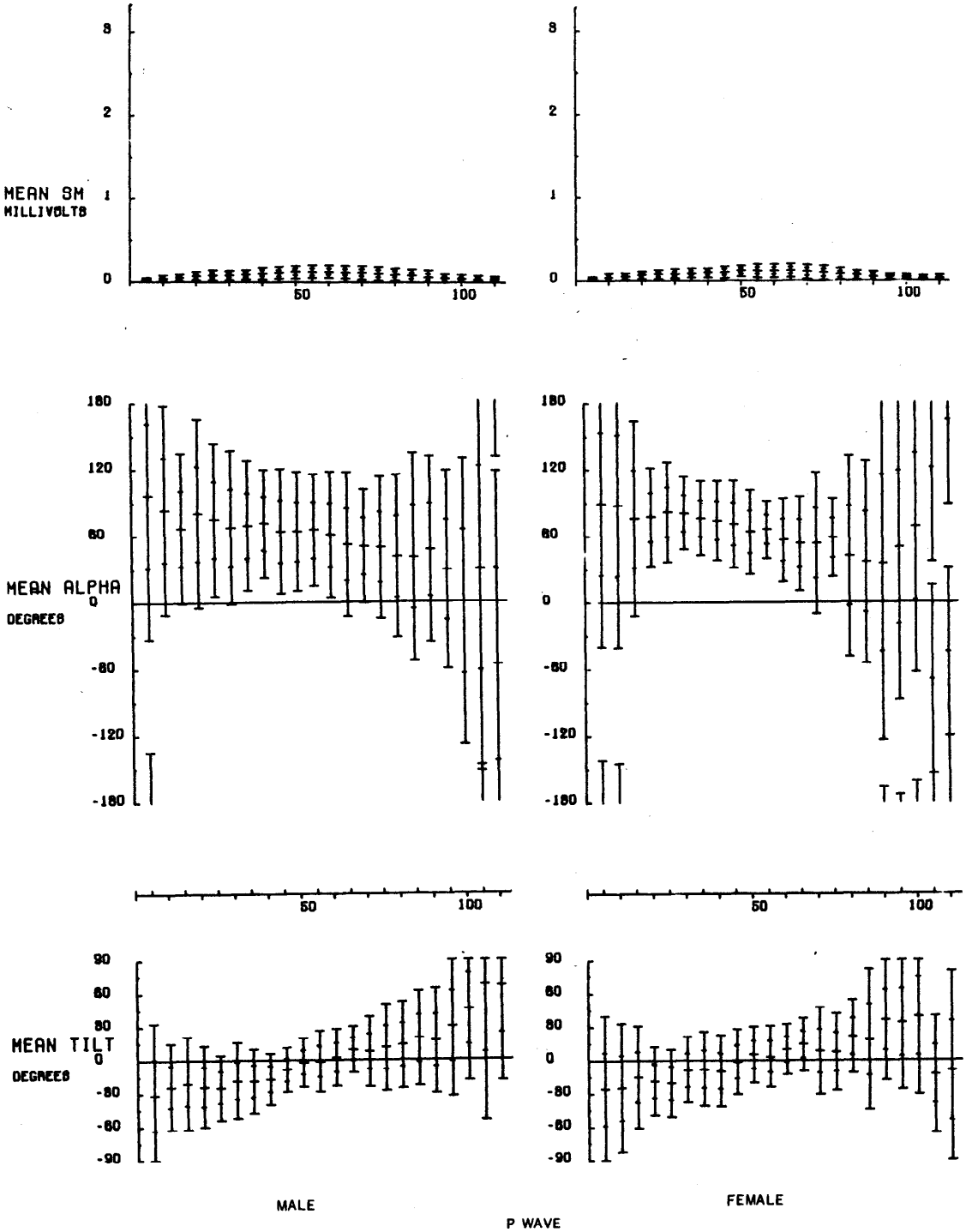
T WAVE
AGE 45 FRANK LEAD SYSTEM

T WAVE FOR MALE AGE 45 FRANK LEAD SYSTEM
AVERAGE AGE IS 45.0

N	SMAG	SDSM	ALPHA	SDA	TILT	SDT	TIME
48.	.0676	.0356	112.99	83.14	-68.36	47.86	2.0
48.	.0704	.0301	-57.63	106.72	-84.02	48.77	4.0
48.	.0783	.0318	-46.18	97.85	-83.67	44.08	6.0
48.	.0878	.0348	-27.06	89.02	-77.96	38.25	8.0
48.	.0905	.0401	-20.61	88.39	-79.48	34.99	10.0
48.	.0996	.0424	-.13	84.44	-73.09	30.16	12.0
48.	.1046	.0406	10.92	75.47	-72.66	22.92	14.0
48.	.1104	.0483	4.88	69.69	-66.02	22.55	16.0
48.	.1223	.0559	19.83	56.81	-63.38	19.61	18.0
48.	.1341	.0605	11.57	46.65	-57.05	22.53	20.0
48.	.1500	.0646	22.33	54.18	-59.93	17.57	22.0
48.	.1679	.0751	21.88	39.62	-54.51	16.58	24.0
48.	.1938	.0889	27.26	37.09	-52.56	17.13	26.0
48.	.2185	.0999	28.96	37.86	-51.83	16.24	28.0
48.	.2557	.1110	28.68	28.77	-48.44	16.90	30.0
48.	.2953	.1216	31.02	27.85	-46.38	14.98	32.0
48.	.3401	.1321	33.54	21.02	-43.72	14.28	34.0
48.	.3803	.1422	34.42	21.48	-41.55	13.47	36.0
48.	.4165	.1468	35.01	21.57	-39.48	14.21	38.0
48.	.4432	.1503	35.70	19.19	-37.81	13.79	40.0
48.	.4572	.1550	37.42	19.37	-36.16	14.46	42.0
48.	.4542	.1499	39.11	20.21	-34.02	13.40	44.0
48.	.4243	.1386	41.64	20.19	-31.89	14.18	46.0
48.	.3641	.1226	42.61	19.00	-30.16	15.61	48.0
48.	.2900	.0976	46.19	19.62	-29.38	14.19	50.0
48.	.2154	.0713	47.21	23.67	-28.11	16.16	52.0
48.	.1532	.0531	50.12	29.23	-31.10	20.47	54.0
48.	.1076	.0406	55.67	36.64	-27.78	23.97	56.0
48.	.0791	.0359	50.45	53.84	-30.68	28.42	58.0
48.	.0659	.0346	66.50	67.67	-39.82	34.61	60.0

T WAVE FOR FEMALE AGE 45 FRANK LEAD SYSTEM
AVERAGE AGE IS 44.4

N	SMAG	SDSM	ALPHA	SDA	TILT	SDT	TIME
60.	.0566	.0263	-149.99	84.24	-50.51	40.71	2.0
60.	.0624	.0248	-141.04	76.49	-56.01	38.59	4.0
60.	.0630	.0292	-126.12	74.96	-60.65	33.49	6.0
60.	.0703	.0284	-123.37	86.65	-69.06	39.09	8.0
60.	.0681	.0303	-98.50	93.20	-73.27	40.62	10.0
60.	.0686	.0282	-87.91	102.12	-80.42	44.33	12.0
60.	.0749	.0312	-50.26	92.18	-73.73	43.75	14.0
60.	.0743	.0331	-2.26	78.44	-76.36	39.67	16.0
60.	.0760	.0327	2.17	87.26	-77.26	36.89	18.0
60.	.0815	.0387	12.20	73.74	-69.49	33.77	20.0
60.	.0909	.0424	15.54	72.23	-62.41	28.93	22.0
60.	.0989	.0430	24.67	67.58	-58.48	26.82	24.0
60.	.1135	.0518	22.49	52.02	-51.76	23.61	26.0
60.	.1286	.0604	25.98	47.69	-45.08	23.57	28.0
60.	.1506	.0742	28.47	40.12	-42.55	18.63	30.0
60.	.1794	.0854	29.65	36.54	-36.95	19.21	32.0
60.	.2112	.0992	28.49	30.02	-32.64	19.22	34.0
60.	.2506	.1099	32.11	24.70	-28.18	16.99	36.0
60.	.2908	.1249	34.19	18.29	-25.03	17.02	38.0
60.	.3241	.1348	33.55	17.85	-21.45	16.23	40.0
60.	.3525	.1399	36.06	15.82	-20.13	17.05	42.0
60.	.3690	.1396	37.72	15.74	-18.44	16.96	44.0
60.	.3663	.1332	40.10	12.66	-17.32	15.49	46.0
60.	.3421	.1214	42.11	12.76	-16.58	13.24	48.0
60.	.2850	.0986	43.73	17.21	-17.07	12.61	50.0
60.	.2224	.0757	50.46	24.40	-19.23	12.97	52.0
60.	.1525	.0538	52.91	28.72	-19.98	13.00	54.0
60.	.1097	.0368	59.64	41.27	-22.10	16.10	56.0
60.	.0752	.0326	66.80	48.23	-25.20	21.86	58.0
60.	.0630	.0289	76.05	62.67	-29.22	30.03	60.0



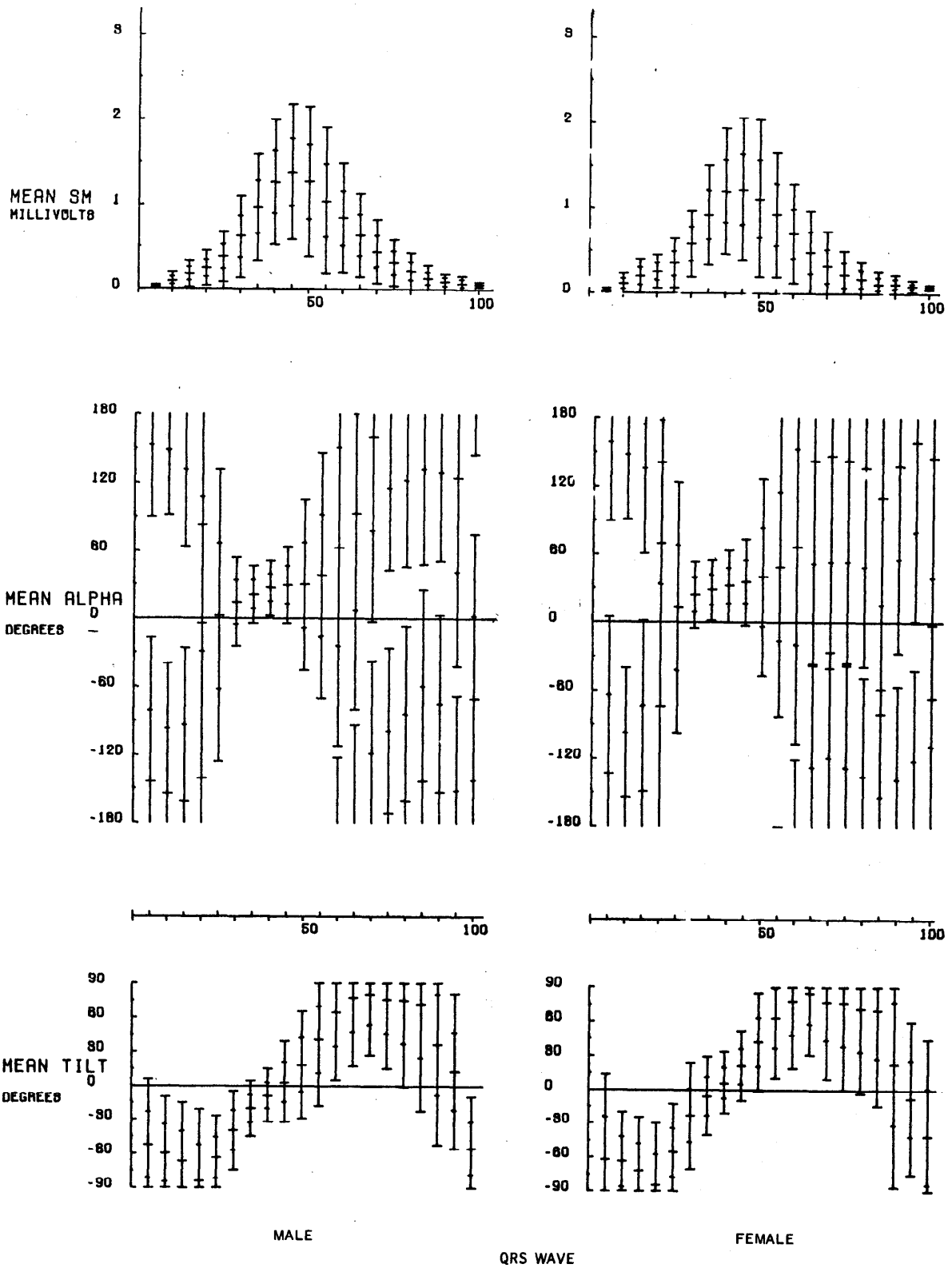
P WAVE
AGE 55 FRANK LEAD SYSTEM

P WAVE FOR MALE AGE 55 FRANK LEAD SYSTEM
AVERAGE AGE IS 53.9

N	SMAG	SDSM	ALPHA	SDA	TILT	SDT	TIME
35.	.0288	.0118	96.48	64.65	-31.22	32.07	5.0
35.	.0437	.0185	83.48	47.06	-23.63	19.25	10.0
35.	.0517	.0211	66.78	33.83	-20.68	20.71	15.0
35.	.0681	.0265	80.14	42.48	-23.94	18.18	20.0
35.	.0777	.0292	74.63	34.21	-24.51	14.62	25.0
35.	.0786	.0277	67.19	34.50	-18.53	17.04	30.0
35.	.0865	.0292	69.36	29.21	-19.04	14.32	35.0
35.	.1045	.0350	70.95	24.08	-17.11	11.60	40.0
35.	.1093	.0350	64.10	27.79	-8.56	9.90	45.0
35.	.1176	.0375	63.60	26.73	-2.16	10.79	50.0
35.	.1208	.0372	64.91	25.10	-1.21	13.57	55.0
35.	.1230	.0375	60.69	28.20	2.45	12.83	60.0
35.	.1141	.0372	51.56	32.22	9.27	10.25	65.0
35.	.1077	.0399	50.21	25.40	7.54	15.66	70.0
35.	.0990	.0416	49.32	31.62	11.55	19.49	75.0
35.	.0936	.0345	40.94	36.35	13.71	19.50	80.0
34.	.0762	.0361	40.70	46.53	19.38	21.26	85.0
32.	.0621	.0369	47.06	41.61	17.31	23.59	90.0
31.	.0479	.0265	29.02	44.45	30.37	31.82	95.0
28.	.0401	.0232	.01	64.22	45.45	32.23	100.0
22.	.0347	.0247	30.23	91.39	67.73	61.23	105.0
15.	.0364	.0148	-56.53	86.87	67.02	42.97	110.0
10.	.0411	.0184	-58.78	76.57	55.10	20.73	115.0
8.	.0357	.0234	-100.66	91.05	48.46	30.38	120.0
5.	.0600	.0263	-94.78	60.62	34.01	10.73	125.0

P WAVE FOR FEMALE AGE 55 FRANK LEAD SYSTEM
AVERAGE AGE IS 54.0

N	SMAG	SDSM	ALPHA	SDA	TILT	SDT	TIME
29.	.0259	.0112	89.25	64.34	-25.67	32.69	5.0
29.	.0446	.0246	87.60	63.94	-24.76	28.98	10.0
29.	.0512	.0216	75.56	43.90	-15.07	22.82	15.0
29.	.0651	.0204	77.16	22.17	-18.74	15.34	20.0
29.	.0780	.0269	81.69	22.59	-20.42	15.23	25.0
29.	.0844	.0294	80.36	16.29	-8.89	14.82	30.0
29.	.0944	.0281	75.90	16.62	-7.92	16.69	35.0
29.	.0952	.0295	73.76	17.85	-9.69	16.03	40.0
29.	.1042	.0352	70.34	19.40	-1.57	14.71	45.0
29.	.1156	.0310	63.41	19.03	4.99	12.46	50.0
29.	.1223	.0391	65.64	12.86	3.20	13.75	55.0
29.	.1205	.0382	56.09	18.76	9.70	11.35	60.0
29.	.1182	.0397	53.23	21.19	13.94	11.93	65.0
29.	.1059	.0442	53.32	31.79	8.09	19.60	70.0
29.	.0968	.0426	58.31	17.67	7.69	17.24	75.0
29.	.0783	.0338	41.75	45.12	21.22	16.36	80.0
27.	.0653	.0269	36.45	45.45	18.26	31.69	85.0
25.	.0484	.0292	35.18	79.50	35.89	27.00	90.0
21.	.0460	.0193	49.48	68.69	33.87	30.14	95.0
20.	.0380	.0162	68.25	65.80	39.37	35.03	100.0
15.	.0335	.0140	-153.43	84.76	-12.78	26.14	105.0
13.	.0326	.0166	-120.12	75.63	-9.23	44.69	110.0
8.	.0316	.0132	-168.94	65.30	17.23	27.60	115.0
4.	.0388	.0227	-144.75	67.14	-29.23	40.24	120.0
2.	.0369	.0314	-82.59	90.75	50.04	40.77	125.0



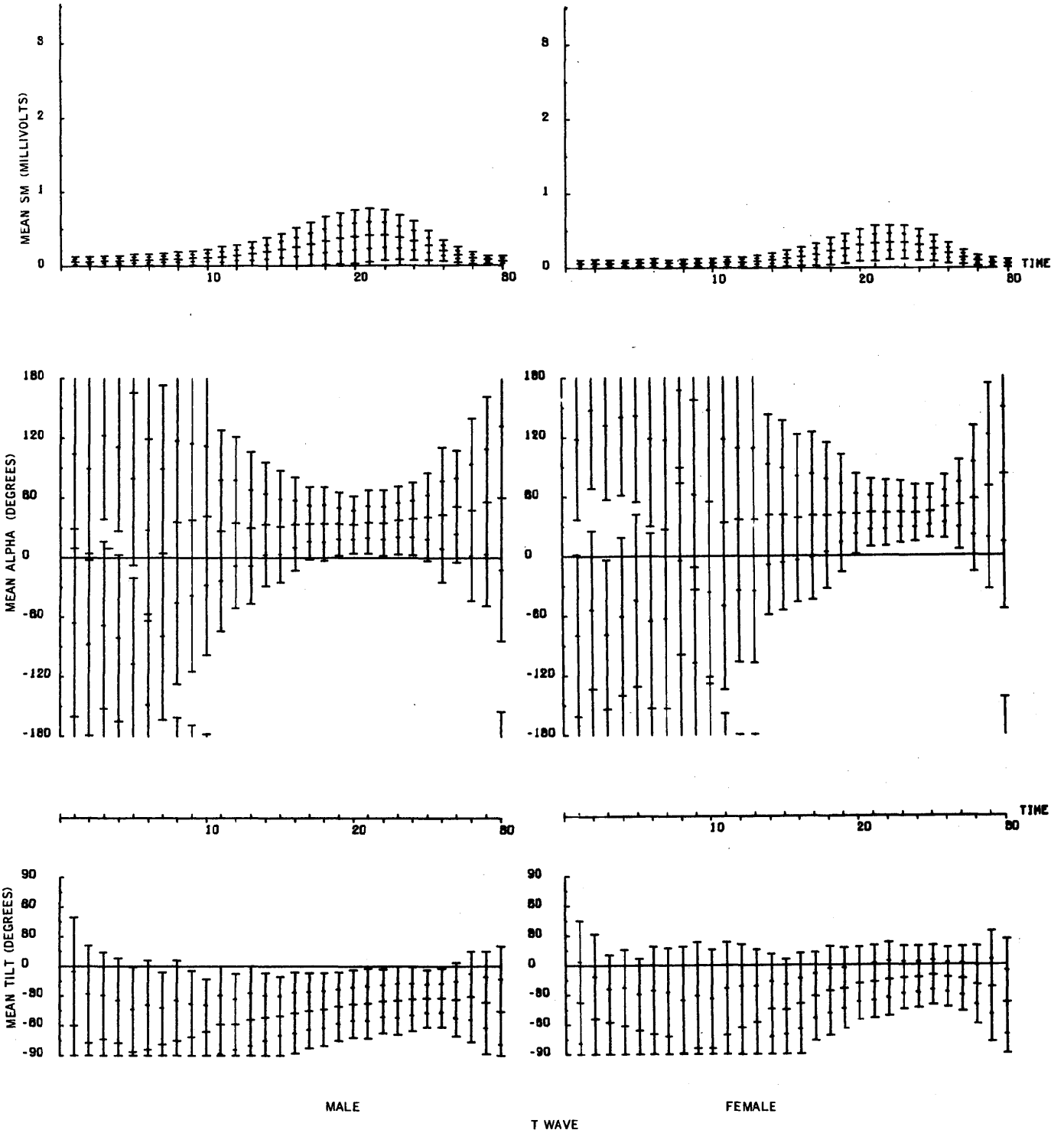
QRS WAVE
AGE 55 FRANK LEAD SYSTEM

QRS WAVE FOR MALE AGE 55 FRANK LEAD SYSTEM
AVERAGE AGE IS 53.9

N	SMAG	SDSM	ALPHA	SDA	TILT	SDT	TIME
35.	.0311	.0113	-143.77	63.08	-52.14	29.10	5.0
35.	.0938	.0461	-154.15	57.34	-59.89	25.14	10.0
35.	.1744	.0761	-161.22	67.61	-66.83	26.06	15.0
35.	.2420	.1016	-140.75	111.75	-83.90	31.40	20.0
35.	.3751	.1481	2.32	64.34	-63.78	18.29	25.0
35.	.6153	.2415	14.38	19.62	-39.45	17.39	30.0
35.	.9633	.3157	21.17	12.82	-20.42	12.30	35.0
35.	1.2618	.3705	26.88	12.17	-8.77	11.70	40.0
35.	1.3792	.4021	29.47	17.00	3.29	17.83	45.0
35.	1.2675	.4432	29.67	37.73	18.15	23.64	50.0
35.	1.0435	.4325	38.02	54.13	40.47	29.25	55.0
35.	.8380	.3244	63.07	87.45	64.27	29.56	60.0
35.	.6335	.2459	93.14	86.64	77.48	30.22	65.0
35.	.4442	.1887	159.67	81.51	80.06	26.43	70.0
35.	.3099	.1370	-171.84	72.81	75.66	30.22	75.0
34.	.2134	.1071	-160.59	76.89	74.88	37.82	80.0
31.	.1328	.0713	-143.55	84.36	71.82	46.98	85.0
22.	.0865	.0490	-152.79	78.03	35.88	44.12	90.0
12.	.0744	.0430	124.78	83.56	12.84	34.22	95.0
5.	.0624	.0151	-70.16	72.56	-55.32	22.79	100.0
	TERMINAL VALUES AT 10 MS INTERVALS						
35.	1.2031	.4479	34.31	60.90	22.84	28.47	-40.0
35.	.7514	.2868	52.42	77.61	63.10	31.14	-30.0
35.	.4492	.2074	-167.57	82.22	78.38	30.90	-20.0
35.	.1822	.0868	-150.71	75.10	70.00	36.67	-10.0

QRS WAVE FOR FEMALE AGE 55 FRANK LEAD SYSTEM
AVERAGE AGE IS 53.9

N	SMAG	SDSM	ALPHA	SDA	TILT	SDT	TIME
30.	.0339	.0140	-133.26	68.81	-61.92	37.53	5.0
30.	.1127	.0588	-154.81	57.30	-64.05	22.00	10.0
30.	.2032	.1008	-149.09	75.22	-71.77	23.52	15.0
30.	.2522	.0973	-74.41	107.78	-85.03	27.56	20.0
30.	.3479	.1464	13.10	55.47	-55.87	21.39	25.0
30.	.5803	.1964	23.98	14.75	-22.92	23.60	30.0
30.	.9205	.2943	28.19	13.43	-5.92	17.46	35.0
30.	1.1965	.3693	32.11	15.88	6.20	13.64	40.0
30.	1.2232	.4178	35.51	19.14	20.77	15.37	45.0
30.	1.1116	.4626	39.66	43.44	41.63	21.61	50.0
30.	.9278	.3671	48.98	65.66	63.15	26.44	55.0
30.	.7011	.2928	66.56	86.48	77.67	29.44	60.0
30.	.4786	.2449	142.29	90.34	84.90	27.18	65.0
30.	.3196	.2033	146.98	93.56	77.38	33.72	70.0
29.	.2151	.1407	142.67	89.45	76.31	38.30	75.0
22.	.1743	.1003	136.48	87.55	71.03	37.15	80.0
21.	.1110	.0752	110.55	95.55	69.53	42.02	85.0
10.	.1113	.0562	138.33	82.67	22.73	54.32	90.0
6.	.0896	.0332	159.33	79.44	-7.49	33.78	95.0
5.	.0763	.0155	145.46	106.13	-41.33	42.86	100.0
3.	.0531	.0134	105.08	100.77	-29.26	54.55	105.0
	TERMINAL VALUES AT 10 MS INTERVALS						
30.	1.0995	.4482	39.49	43.74	31.32	25.45	-40.0
30.	.8268	.4127	50.21	78.08	66.15	28.72	-30.0
30.	.4346	.1713	135.30	91.07	78.97	32.36	-20.0
30.	.1558	.0763	159.15	87.79	71.44	40.35	-10.0



T WAVE
AGE 55 FRANK LEAD SYSTEM

T WAVE FOR MALE AGE 55 FRANK LEAD SYSTEM
AVERAGE AGE IS 53.9

N	SMAG	SDSM	ALPHA	SDA	TILT	SDT	TIME
35.	.0590	.0361	-160.66	94.82	-60.25	54.80	2.0
35.	.0641	.0336	-178.93	91.58	-76.90	48.99	4.0
35.	.0728	.0340	-152.44	84.41	-73.39	43.80	6.0
35.	.0738	.0326	-164.97	83.85	-77.35	42.76	8.0
35.	.0785	.0403	166.03	86.72	-85.97	42.47	10.0
35.	.0849	.0396	119.54	91.71	-84.20	44.96	12.0
35.	.0880	.0417	4.70	84.22	-78.58	36.36	14.0
35.	.0943	.0482	35.88	81.52	-74.79	40.35	16.0
35.	.1057	.0492	38.28	76.58	-71.48	33.59	18.0
35.	.1129	.0551	42.07	70.04	-66.17	26.89	20.0
35.	.1215	.0683	27.20	50.60	-58.70	29.43	22.0
35.	.1403	.0689	35.07	43.21	-58.63	25.52	24.0
35.	.1570	.0828	29.95	38.29	-53.75	26.83	26.0
35.	.1854	.0963	33.70	31.00	-52.01	22.76	28.0
35.	.2162	.1090	31.53	28.02	-50.04	19.89	30.0
35.	.2511	.1277	34.06	23.59	-46.91	20.59	32.0
35.	.2911	.1442	34.79	18.08	-44.68	18.85	34.0
35.	.3318	.1621	34.41	18.60	-43.54	18.49	36.0
35.	.3665	.1736	34.30	15.85	-40.61	17.16	38.0
35.	.3933	.1791	33.48	14.48	-37.92	17.12	40.0
35.	.4064	.1800	36.25	16.06	-37.43	17.54	42.0
35.	.4063	.1694	35.15	16.45	-34.98	16.14	44.0
35.	.3819	.1494	38.03	17.17	-34.31	17.18	46.0
35.	.3348	.1309	39.43	18.23	-33.28	16.09	48.0
35.	.2689	.0988	41.12	22.08	-32.45	14.44	50.0
35.	.2013	.0699	43.31	33.95	-31.89	14.95	52.0
35.	.1424	.0524	52.01	28.11	-33.45	18.71	54.0
35.	.1000	.0387	48.36	45.78	-30.83	22.99	56.0
35.	.0760	.0280	56.61	52.66	-36.64	25.94	58.0
35.	.0650	.0340	60.38	72.22	-45.57	33.09	60.0

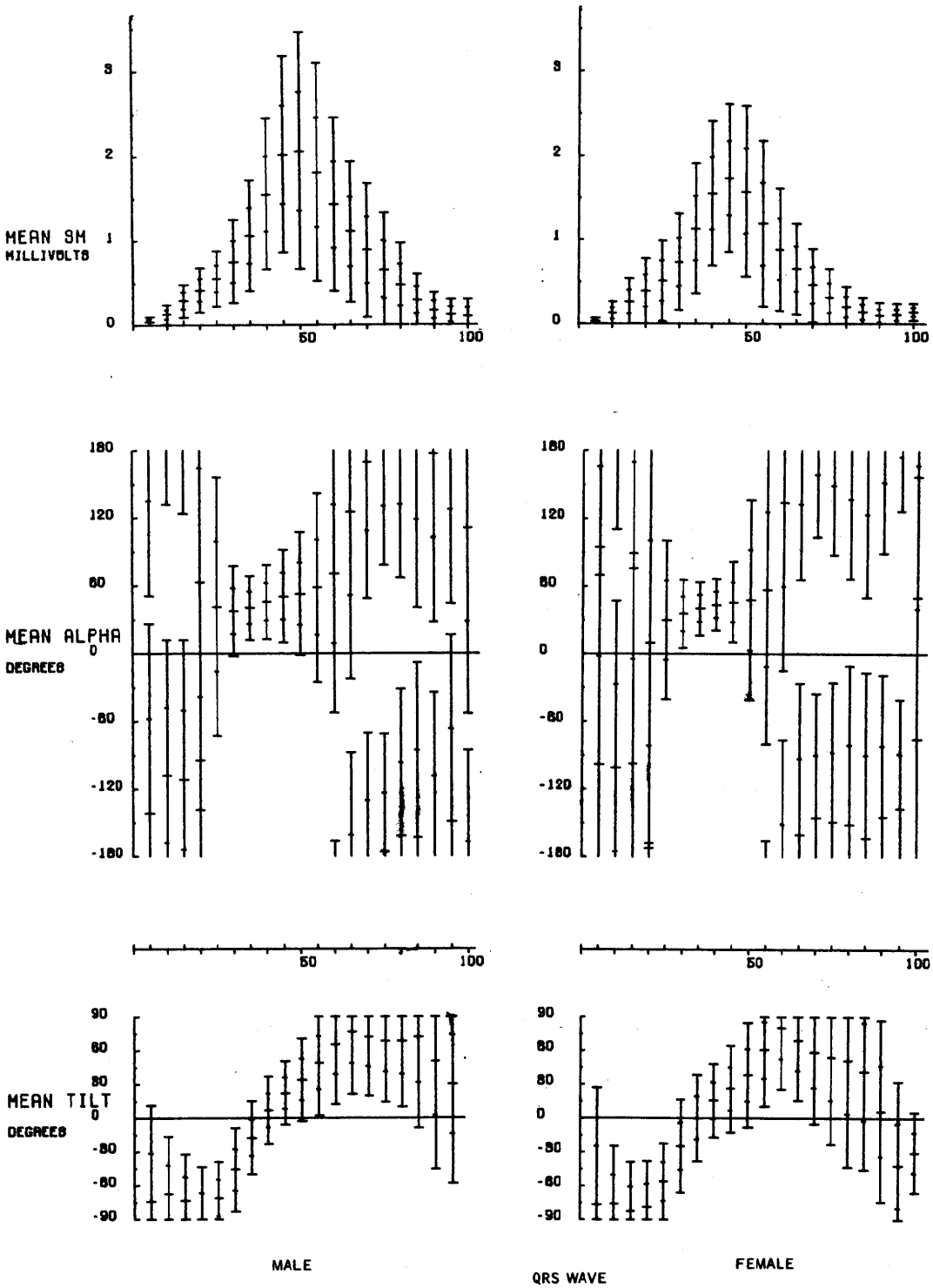
T WAVE FOR FEMALE AGE 55 FRANK LEAD SYSTEM
AVERAGE AGE IS 53.9

N	SMAG	SDSM	ALPHA	SDA	TILT	SDT	TIME
30.	.0589	.0275	-160.94	81.23	-37.42	41.06	2.0
30.	.0610	.0282	-133.18	79.44	-54.27	43.02	4.0
30.	.0611	.0238	-153.54	74.75	-57.69	34.01	6.0
30.	.0666	.0229	-140.19	79.29	-61.25	38.62	8.0
30.	.0682	.0251	-131.50	86.86	-65.98	36.46	10.0
30.	.0696	.0288	-153.31	88.34	-69.52	44.19	12.0
30.	.0657	.0233	-153.17	90.01	-71.85	44.50	14.0
30.	.0649	.0281	-98.65	94.03	-89.08	53.97	16.0
30.	.0716	.0270	157.40	95.56	-84.25	53.69	18.0
30.	.0747	.0291	55.08	91.67	-83.69	49.74	20.0
30.	.0790	.0332	33.58	84.06	-70.22	46.68	22.0
30.	.0837	.0340	36.94	71.80	-62.81	41.97	24.0
30.	.0934	.0404	36.67	71.95	-57.45	36.73	26.0
30.	.1071	.0450	41.48	50.53	-44.51	27.83	28.0
30.	.1291	.0543	40.89	47.72	-44.69	25.24	30.0
30.	.1545	.0634	37.94	42.33	-38.94	25.49	32.0
30.	.1822	.0748	40.31	42.16	-31.71	22.40	34.0
30.	.2257	.0904	40.37	36.81	-26.23	22.63	36.0
30.	.2607	.1015	42.76	29.63	-23.71	20.39	38.0
30.	.3058	.1085	41.75	20.20	-18.73	18.54	40.0
30.	.3276	.1196	43.30	17.05	-17.25	18.50	42.0
30.	.3415	.1142	42.92	16.42	-14.79	18.60	44.0
30.	.3441	.1106	43.87	15.40	-13.15	16.10	46.0
30.	.3133	.1047	42.80	14.26	-12.45	15.71	48.0
30.	.2645	.0879	44.37	13.34	-10.73	15.01	50.0
30.	.2003	.0703	49.00	15.95	-12.46	15.04	52.0
30.	.1440	.0479	51.07	22.42	-14.61	16.36	54.0
30.	.0969	.0350	56.70	36.78	-20.51	19.74	56.0
30.	.0728	.0321	69.49	51.74	-22.25	27.82	58.0
30.	.0632	.0276	81.62	67.92	-38.37	32.12	60.0

Appendix IV

Means and Standard Deviations (Graphical and Tabular*) for the Helm Lead System for QRS and T in Spherical Coordinates.

*See text Section 5 for a note on accuracy of data.



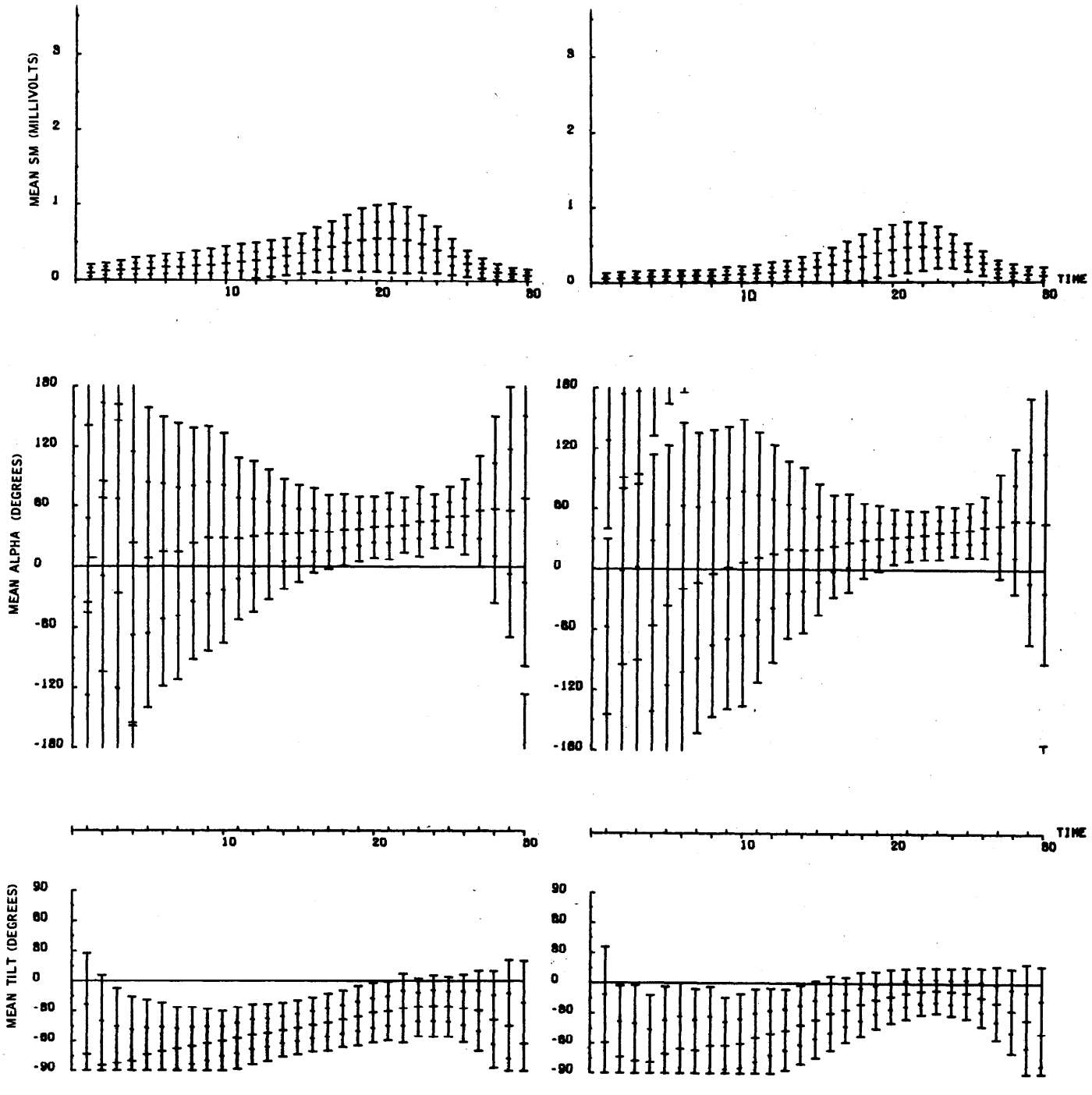
QRS WAVE
AGE 25 HELM LEAD SYSTEM

QRS WAVE FOR MALE AGE 25 HELM LEAD SYSTEM
AVERAGE AGE IS 25.0

N	SMAG	SDSM	ALPHA	SDA	TILT	SDT	TIME
38.	.0360	.0342	-141.43	83.89	-74.31	42.60	5.0
38.	.1264	.0559	-107.68	60.01	-67.73	25.46	10.0
38.	.2870	.0990	-112.10	61.93	-73.57	20.77	15.0
38.	.4129	.1332	63.17	101.11	-89.71	23.11	20.0
38.	.5491	.1630	41.62	57.08	-71.18	16.12	25.0
38.	.7528	.2486	37.44	19.93	-45.00	18.51	30.0
38.	1.0586	.3284	40.46	14.05	-17.64	16.41	35.0
38.	1.5547	.4490	45.63	16.35	5.69	15.00	40.0
38.	2.0232	.5802	50.59	20.35	22.04	14.10	45.0
38.	2.0593	.7018	52.86	27.14	34.08	18.37	50.0
38.	1.8101	.6468	58.39	41.84	49.08	23.56	55.0
38.	1.4279	.5152	70.60	61.40	65.46	26.58	60.0
38.	1.1066	.4159	124.95	73.56	76.67	27.67	65.0
38.	.8851	.3968	169.26	60.27	71.73	26.11	70.0
38.	.6545	.3400	-176.49	52.78	68.39	27.11	75.0
37.	.4671	.2503	-162.20	65.50	68.10	29.06	80.0
36.	.2873	.1583	-163.68	77.87	71.80	40.40	85.0
31.	.1746	.1027	176.76	74.33	50.25	48.11	90.0
22.	.1173	.0907	-149.61	82.93	29.63	44.21	95.0
17.	.0997	.1015	110.63	81.80	-37.31	44.79	100.0
5.	.0820	.0444	131.34	118.67	-68.12	22.76	105.0
	TERMINAL VALUES AT 10 MS INTERVALS						
38.	1.6791	.6614	61.21	58.35	50.75	28.24	-40.0
38.	1.1648	.4656	129.78	68.99	73.20	32.01	-30.0
38.	.6184	.2694	-163.74	65.44	67.48	28.65	-20.0
38.	.2378	.1214	-165.20	78.08	65.24	42.10	-10.0

QRS WAVE FOR FEMALE AGE 25 HELM LEAD SYSTEM
AVERAGE AGE IS 24.3

N	SMAG	SDSM	ALPHA	SDA	TILT	SDT	TIME
41.	.0332	.0172	-98.16	96.18	-76.29	51.76	5.0
41.	.1252	.0668	-101.27	74.42	-75.48	25.26	10.0
41.	.2603	.1377	-97.52	93.27	-82.18	21.44	15.0
41.	.3906	.1938	9.56	91.07	-78.75	20.34	20.0
41.	.5115	.2410	29.87	35.30	-56.45	17.13	25.0
41.	.7333	.2879	35.68	15.15	-24.86	20.74	30.0
41.	1.1335	.3873	40.40	11.81	.33	19.13	35.0
41.	1.5480	.4295	43.75	11.41	15.42	16.45	40.0
41.	1.7297	.4377	46.08	17.68	25.95	19.32	45.0
41.	1.5744	.5089	47.83	44.47	38.34	23.36	50.0
41.	1.1865	.4923	57.06	68.64	60.40	24.97	55.0
41.	.8846	.3650	134.29	74.56	80.04	27.43	60.0
41.	.6493	.2720	-160.14	66.82	68.71	26.66	65.0
41.	.4562	.2169	-145.70	55.39	58.55	31.79	70.0
40.	.3069	.1726	-149.06	61.65	54.20	38.76	75.0
36.	.2039	.1194	-151.85	70.70	51.17	47.44	80.0
28.	.1389	.0869	-163.18	73.25	41.03	43.45	85.0
19.	.0960	.0766	-144.79	63.09	6.32	40.21	90.0
7.	.1064	.0665	-137.08	48.21	-42.05	37.19	95.0
2.	.1414	.0506	-75.98	116.70	-30.61	17.77	100.0
	TERMINAL VALUES AT 10 MS INTERVALS						
41.	1.4642	.4618	50.81	40.92	34.54	24.32	-40.0
41.	1.1170	.5549	92.73	81.59	76.04	33.07	-30.0
41.	.5988	.3045	-146.60	70.20	63.24	29.52	-20.0
41.	.2290	.1133	-142.65	65.37	50.38	42.21	-10.0



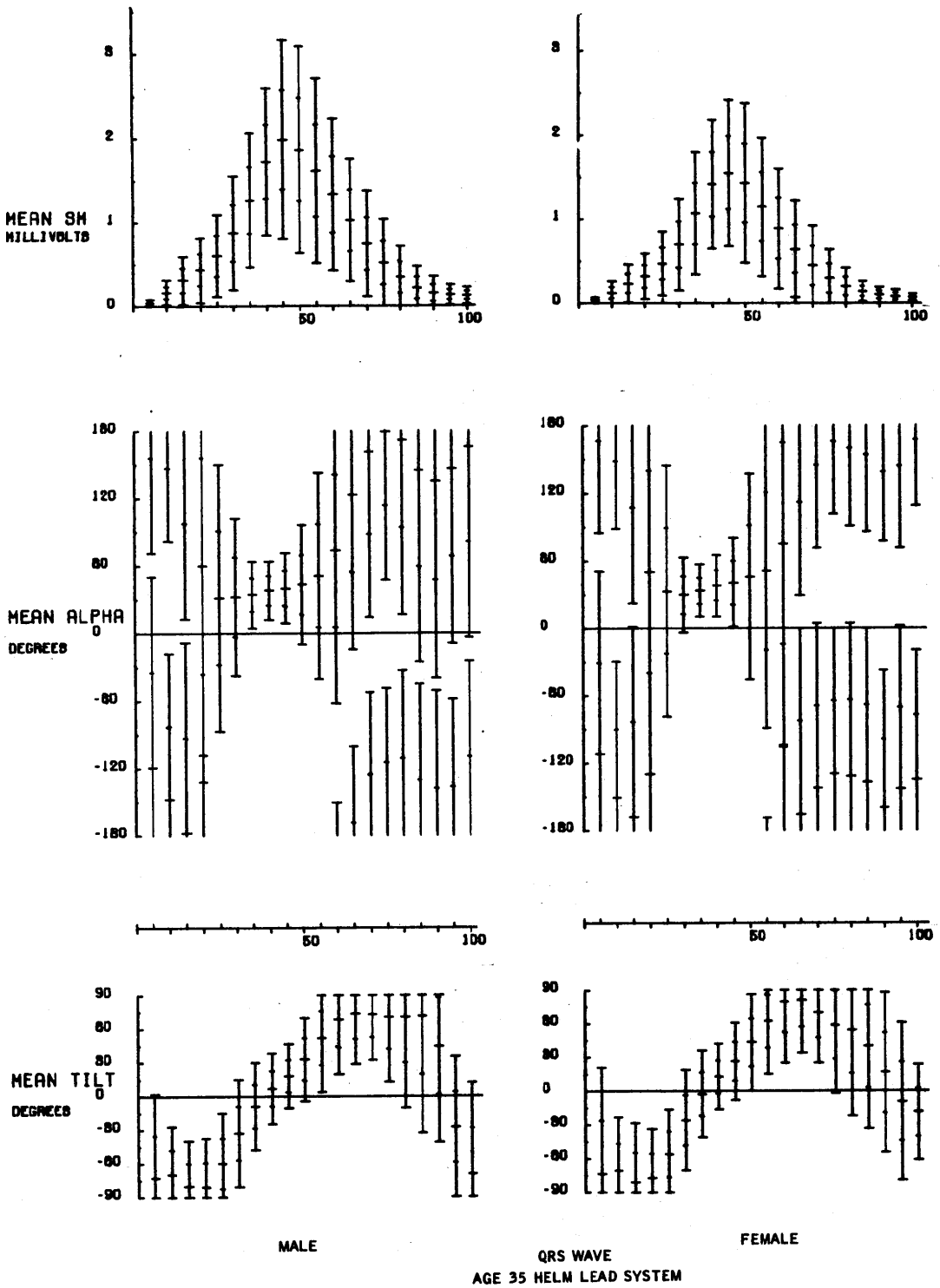
T WAVE
AGE 25 HELM LEAD SYSTEM

T WAVE FOR MALE AGE 25 HELM LEAD SYSTEM
AVERAGE AGE IS 25.0

N	SMAG	SDSM	ALPHA	SDA	TILT	SDT	TIME
38.	.0949	.0531	140.14	92.44	-73.61	50.24	2.0
38.	.1156	.0546	-103.38	94.17	-85.10	45.59	4.0
38.	.1287	.0630	-26.40	93.99	-82.59	37.58	6.0
38.	.1432	.0716	23.56	90.73	-79.98	32.19	8.0
38.	.1524	.0783	9.14	74.74	-73.27	27.13	10.0
38.	.1672	.0862	15.30	65.99	-70.15	24.09	12.0
38.	.1736	.0942	15.28	63.62	-67.76	20.87	14.0
38.	.1853	.1037	23.17	57.33	-64.89	19.19	16.0
38.	.1996	.1109	28.41	55.68	-62.18	17.24	18.0
38.	.2162	.1181	28.83	52.05	-60.20	15.15	20.0
38.	.2371	.1203	27.98	40.19	-57.19	15.57	22.0
38.	.2603	.1176	30.18	37.25	-53.46	15.11	24.0
38.	.2905	.1178	32.39	32.34	-51.52	14.22	26.0
38.	.3169	.1231	32.54	27.27	-48.72	13.58	28.0
38.	.3582	.1329	32.75	24.03	-46.53	13.59	30.0
38.	.4069	.1491	35.68	20.98	-43.65	13.49	32.0
38.	.4541	.1704	34.25	18.33	-41.35	14.26	34.0
38.	.5000	.1863	36.62	17.82	-38.08	14.11	36.0
38.	.5388	.2097	37.47	16.10	-35.05	14.77	38.0
38.	.5573	.2203	39.46	15.24	-31.77	14.71	40.0
38.	.5627	.2271	40.58	16.43	-29.66	14.61	42.0
38.	.5430	.2198	41.50	13.79	-27.05	17.29	44.0
38.	.4901	.1896	45.21	17.33	-25.63	14.40	46.0
38.	.4091	.1550	45.58	13.40	-24.45	15.35	48.0
38.	.3229	.1195	49.73	14.98	-25.45	14.94	50.0
38.	.2338	.0892	49.97	18.62	-26.98	16.83	52.0
38.	.1706	.0633	55.21	27.45	-29.47	20.08	54.0
38.	.1237	.0507	57.18	46.23	-33.17	24.47	56.0
38.	.1009	.0393	55.15	62.11	-44.60	32.74	58.0
38.	.0821	.0394	67.97	82.85	-62.23	41.26	60.0

T WAVE FOR FEMALE AGE 25 HELM LEAD SYSTEM
AVERAGE AGE IS 24.3

N	SMAG	SDSM	ALPHA	SDA	TILT	SDT	TIME
41.	.0678	.0348	-144.68	87.29	-59.19	47.74	2.0
41.	.0739	.0379	-94.17	92.82	-73.17	34.92	4.0
41.	.0828	.0365	-90.13	92.67	-76.89	37.38	6.0
41.	.0890	.0386	-56.62	85.20	-78.78	33.32	8.0
41.	.0894	.0391	-35.87	79.80	-70.37	33.47	10.0
41.	.0976	.0372	-19.26	82.44	-65.61	32.82	12.0
41.	.0954	.0391	-13.72	74.90	-66.56	30.19	14.0
41.	.1031	.0387	-4.27	71.45	-62.45	29.54	16.0
41.	.1111	.0471	1.14	70.21	-62.30	24.13	18.0
41.	.1158	.0518	6.42	71.40	-60.22	24.79	20.0
41.	.1268	.0561	11.98	62.37	-53.83	23.94	22.0
41.	.1382	.0636	15.94	54.15	-49.24	21.90	24.0
41.	.1558	.0669	20.14	44.11	-46.15	20.26	26.0
41.	.1762	.0837	19.53	41.39	-41.47	19.67	28.0
41.	.2060	.0976	20.39	32.52	-35.86	19.09	30.0
41.	.2390	.1174	23.22	25.56	-29.86	18.58	32.0
41.	.2878	.1314	26.68	24.64	-25.94	16.32	34.0
41.	.3351	.1504	29.14	18.52	-20.53	16.05	36.0
41.	.3900	.1623	30.84	16.33	-15.99	14.14	38.0
41.	.4368	.1683	32.55	13.72	-12.47	13.30	40.0
41.	.4676	.1701	33.35	12.58	-9.81	12.56	42.0
41.	.4793	.1582	34.63	11.90	-7.31	11.84	44.0
41.	.4642	.1373	36.56	13.12	-6.59	11.18	46.0
41.	.4110	.1130	38.26	12.08	-7.83	11.75	48.0
41.	.3353	.0922	39.77	13.59	-8.94	12.82	50.0
41.	.2548	.0802	42.83	15.41	-13.22	14.55	52.0
41.	.1805	.0555	43.99	26.08	-19.11	18.23	54.0
41.	.1315	.0532	48.50	36.17	-27.04	21.05	56.0
41.	.1062	.0525	48.43	61.16	-36.12	27.69	58.0
41.	.0878	.0543	46.56	69.64	-49.51	33.20	60.0



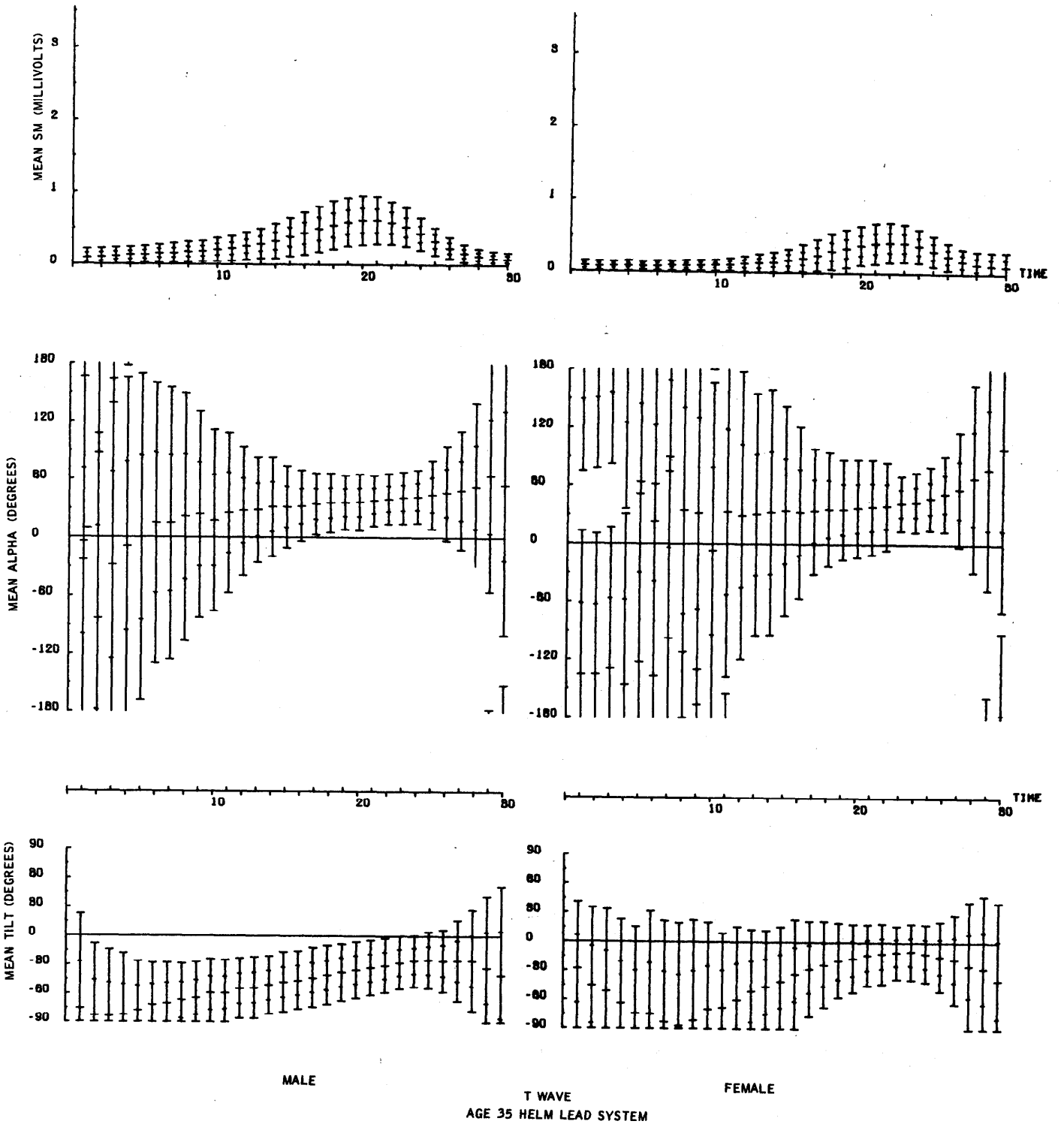
QRS WAVE
AGE 35 HELM LEAD SYSTEM

QRS WAVE FOR MALE AGE 35 HELM LEAD SYSTEM
AVERAGE AGE IS 35.7

N	SMAG	SDSM	ALPHA	SDA	TILT	SDT	TIME
52.	.0406	.0174	-119.01	84.70	-72.66	37.45	5.0
52.	.1610	.0727	-147.92	65.08	-69.53	21.40	10.0
52.	.3059	.1424	-177.58	84.79	-80.53	20.47	15.0
52.	.4289	.1924	60.05	95.95	-81.22	21.97	20.0
52.	.5986	.2455	31.38	59.37	-59.99	22.53	25.0
52.	.8675	.3410	32.23	35.04	-33.04	24.01	30.0
52.	1.2618	.4011	34.18	14.92	-8.81	19.43	35.0
52.	1.7184	.4383	37.88	12.99	6.75	15.75	40.0
52.	1.9777	.5898	40.08	15.72	17.96	14.28	45.0
52.	1.8616	.6153	43.13	26.26	32.89	18.57	50.0
52.	1.6095	.5512	51.25	45.80	51.57	23.86	55.0
52.	1.3266	.4522	73.32	67.82	68.04	24.17	60.0
52.	1.0168	.3651	122.70	68.32	73.55	22.46	65.0
52.	.7373	.3145	161.10	73.31	72.80	20.13	70.0
52.	.5110	.2586	179.08	66.10	70.72	28.99	75.0
52.	.3374	.1871	171.54	77.58	70.67	40.52	80.0
52.	.2121	.1281	144.63	85.13	71.28	52.05	85.0
45.	.1512	.0971	134.75	87.20	44.62	43.09	90.0
26.	.1288	.0600	146.08	77.53	-27.63	31.36	95.0
14.	.1220	.0487	165.59	84.69	-69.41	40.83	100.0
6.	.1047	.0654	-35.31	26.73	-84.72	21.77	105.0
2.	.0770	.0344	69.23	34.41	-59.24	53.53	110.0
	TERMINAL VALUES AT 10 MS INTERVALS						
52.	1.5231	.5007	55.82	49.23	49.88	21.06	-40.0
52.	.9817	.3822	133.11	72.71	75.02	24.83	-30.0
52.	.4965	.2205	-173.18	63.90	69.06	28.01	-20.0
52.	.1924	.0870	167.71	85.04	67.23	56.36	-10.0

QRS WAVE FOR FEMALE AGE 35 HELM LEAD SYSTEM
AVERAGE AGE IS 35.5

N	SMAG	SDSM	ALPHA	SDA	TILT	SDT	TIME
48.	.0370	.0183	-112.08	81.56	-73.58	47.16	5.0
48.	.1238	.0683	-150.61	60.57	-70.39	23.62	10.0
48.	.2335	.1116	-167.99	84.90	-81.18	26.41	15.0
48.	.3184	.1348	50.02	89.94	-77.23	21.91	20.0
48.	.4699	.1896	33.14	55.85	-56.27	19.96	25.0
48.	.6965	.2735	29.63	16.85	-25.93	22.42	30.0
48.	1.0686	.3659	33.44	11.61	-2.68	19.46	35.0
48.	1.4156	.3846	37.99	13.57	12.48	14.63	40.0
48.	1.5520	.4362	40.63	19.68	26.34	17.32	45.0
48.	1.4294	.4738	45.50	45.78	43.22	21.43	50.0
48.	1.1495	.4124	50.73	70.18	62.20	23.64	55.0
48.	.8881	.3585	75.31	89.63	79.29	27.19	60.0
48.	.6447	.2880	-165.45	82.72	80.66	23.64	65.0
48.	.4463	.2381	-142.17	73.39	69.82	22.43	70.0
46.	.2956	.1714	-129.57	64.76	58.81	30.60	75.0
41.	.1966	.1094	-132.12	68.38	54.04	38.11	80.0
33.	.1413	.0618	-137.26	68.72	39.56	36.75	85.0
25.	.0975	.0471	-160.08	61.16	16.30	35.57	90.0
15.	.0779	.0428	-143.32	72.61	-9.47	35.07	95.0
4.	.0718	.0201	-135.26	57.81	-19.10	21.34	100.0
2.	.0391	.0305	-82.02	51.64	-41.12	17.21	105.0
	TERMINAL VALUES AT 10 MS INTERVALS						
48.	1.3731	.5003	46.97	59.62	40.89	22.34	-40.0
48.	.9974	.4124	69.14	95.40	79.69	33.95	-30.0
48.	.5156	.2508	-131.73	86.72	71.27	30.57	-20.0
48.	.2051	.0936	-130.01	75.63	57.74	40.08	-10.0



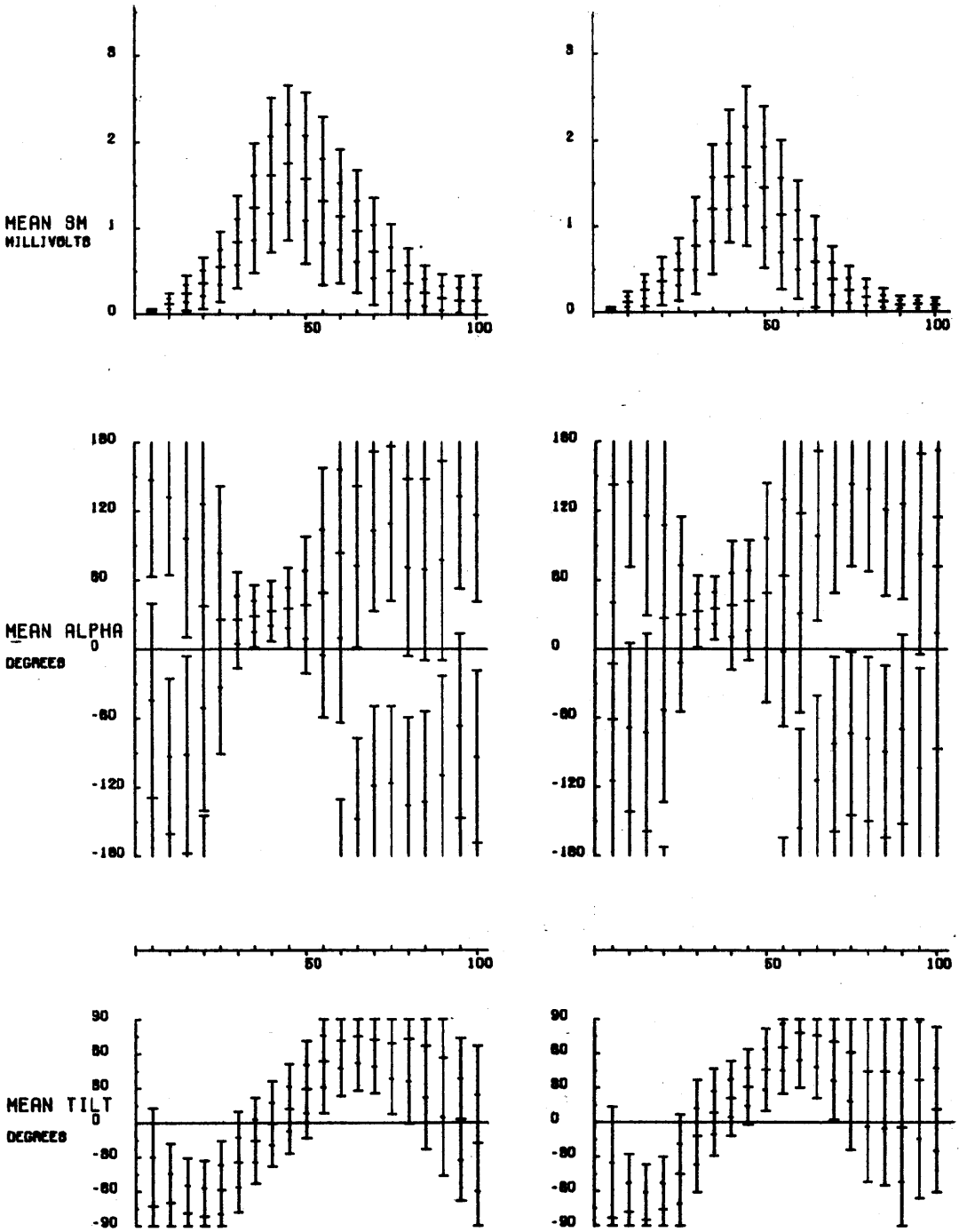
T WAVE
AGE 35 HELM LEAD SYSTEM

T WAVE FOR MALE AGE 35 HELM LEAD SYSTEM
AVERAGE AGE IS 35.7

N	SMAG	SDSM	ALPHA	SDA	TILT	SDT	TIME
52.	.0878	.0623	166.04	94.71	-75.98	49.16	2.0
52.	.1022	.0597	-83.03	95.12	-83.51	37.62	4.0
52.	.1139	.0569	-28.70	96.24	-84.03	35.02	6.0
52.	.1253	.0579	-8.68	86.81	-82.32	32.10	8.0
52.	.1344	.0595	-.10	84.45	-77.95	25.91	10.0
52.	.1467	.0612	15.04	72.33	-72.37	22.49	12.0
52.	.1528	.0669	14.72	70.20	-70.70	21.62	14.0
52.	.1656	.0700	21.48	63.94	-67.01	19.26	16.0
52.	.1787	.0707	24.14	53.25	-64.21	18.60	18.0
52.	.2013	.0788	17.60	46.81	-59.45	17.75	20.0
52.	.2184	.0857	25.47	41.25	-59.01	17.12	22.0
52.	.2490	.0954	27.40	33.29	-55.02	15.75	24.0
52.	.2818	.1033	28.59	27.04	-53.97	16.10	26.0
52.	.3219	.1191	31.62	25.50	-51.35	15.36	28.0
52.	.3758	.1312	31.26	20.97	-47.91	15.72	30.0
52.	.4288	.1474	32.45	18.13	-46.20	15.26	32.0
52.	.4880	.1569	34.45	15.84	-43.15	15.58	34.0
52.	.5425	.1679	35.76	15.23	-40.59	15.29	36.0
52.	.5832	.1679	36.00	14.01	-37.61	14.78	38.0
52.	.6104	.1685	36.49	14.55	-34.95	14.66	40.0
52.	.6091	.1650	37.97	12.89	-32.84	14.17	42.0
52.	.5796	.1477	40.08	13.00	-30.44	14.12	44.0
52.	.5155	.1351	40.92	13.19	-27.41	13.58	46.0
52.	.4264	.1122	42.30	13.82	-25.73	13.40	48.0
52.	.3208	.0951	44.22	17.68	-24.88	14.70	50.0
52.	.2334	.0737	46.26	24.67	-25.44	16.11	52.0
52.	.1598	.0607	48.84	30.52	-25.72	21.00	54.0
52.	.1160	.0521	52.44	43.60	-25.20	26.28	56.0
52.	.0907	.0493	63.64	59.38	-32.84	37.11	58.0
52.	.0803	.0456	53.98	77.00	-40.23	45.67	60.0

T WAVE FOR FEMALE AGE 35 HELM LEAD SYSTEM
AVERAGE AGE IS 35.5

N	SMAG	SDSM	ALPHA	SDA	TILT	SDT	TIME
48.	.0757	.0368	-135.78	74.65	-27.99	34.79	2.0
48.	.0745	.0330	-135.98	73.06	-44.78	39.98	4.0
48.	.0773	.0312	-129.94	73.72	-50.99	42.31	6.0
48.	.0811	.0337	-146.49	88.58	-64.10	43.75	8.0
48.	.0836	.0278	-122.37	93.09	-74.27	45.01	10.0
48.	.0845	.0344	-137.61	99.42	-74.96	53.29	12.0
48.	.0881	.0323	-97.67	93.76	-83.54	52.78	14.0
48.	.0875	.0360	34.24	107.04	-87.21	53.49	16.0
48.	.0931	.0355	31.32	98.96	-81.83	52.11	18.0
48.	.0956	.0361	-6.98	86.67	-69.50	44.77	20.0
48.	.1028	.0438	33.27	85.58	-68.08	38.55	22.0
48.	.1151	.0501	29.29	74.37	-59.64	37.53	24.0
48.	.1258	.0618	30.46	62.56	-51.14	31.85	26.0
48.	.1447	.0669	32.71	63.35	-46.10	29.16	28.0
48.	.1676	.0782	34.20	54.29	-40.48	27.96	30.0
48.	.2014	.0928	32.86	44.45	-33.36	28.20	32.0
48.	.2450	.1092	34.33	32.49	-27.49	24.78	34.0
48.	.2954	.1240	36.33	29.47	-23.00	22.31	36.0
48.	.3386	.1306	36.11	25.99	-18.57	19.32	38.0
48.	.3794	.1369	37.22	25.33	-16.54	17.63	40.0
48.	.4096	.1391	38.66	24.41	-13.10	15.76	42.0
48.	.4243	.1395	39.42	22.73	-11.29	15.58	44.0
48.	.4243	.1299	42.58	14.11	-9.99	13.67	46.0
48.	.3775	.1139	43.74	15.42	-9.37	14.25	48.0
48.	.3102	.1068	47.84	16.27	-11.12	14.84	50.0
48.	.2376	.0936	52.60	19.63	-14.00	17.94	52.0
48.	.1668	.0891	56.76	29.65	-17.54	22.98	54.0
48.	.1317	.0890	68.40	48.32	-23.95	32.94	56.0
48.	.1052	.0956	77.12	62.28	-26.63	37.15	58.0
48.	.0977	.1021	99.21	84.59	-38.87	40.16	60.0



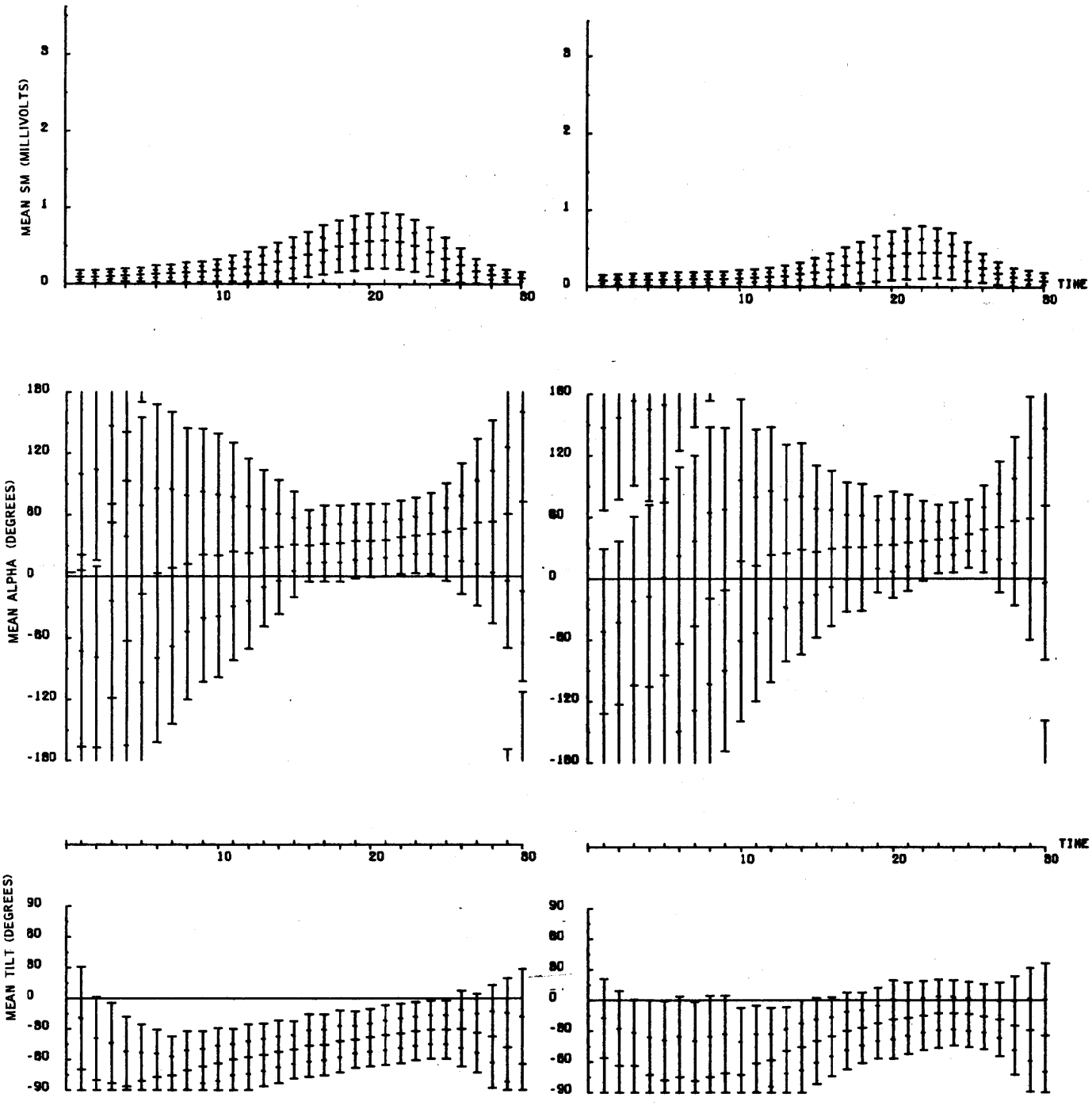
QRS WAVE
AGE 45 HELM LEAD SYSTEM

QRS WAVE FOR MALE AGE 45 HELM LEAD SYSTEM
AVERAGE AGE IS 45.1

N	SMAG	SDSM	ALPHA	SDA	TILT	SDT	TIME
49.	.0352	.0140	-128.67	84.21	-72.46	42.48	5.0
49.	.1224	.0589	-160.37	67.47	-69.92	25.87	10.0
49.	.2415	.1027	-177.81	85.99	-78.79	24.06	15.0
49.	.3567	.1498	37.53	88.75	-81.47	24.23	20.0
49.	.5465	.2053	25.26	58.12	-58.30	21.22	25.0
49.	.8401	.2705	25.30	20.84	-34.37	21.93	30.0
49.	1.2381	.3772	28.57	13.42	-15.68	18.89	35.0
49.	1.6235	.4496	33.00	13.00	-1.07	18.45	40.0
49.	1.7633	.4492	35.58	17.38	12.06	19.43	45.0
49.	1.5833	.4967	38.29	29.60	29.05	21.13	50.0
49.	1.3218	.4909	49.06	54.25	53.46	22.51	55.0
49.	1.1360	.3903	82.95	73.24	71.15	24.07	60.0
49.	.9653	.3585	142.10	70.17	75.02	23.45	65.0
49.	.7307	.3124	171.94	69.34	71.95	23.16	70.0
49.	.5133	.2670	176.24	67.22	69.65	30.56	75.0
46.	.3641	.2053	147.48	76.64	72.72	36.71	80.0
43.	.2531	.1584	148.03	79.03	67.08	45.30	85.0
33.	.1863	.1396	163.80	86.63	55.48	51.63	90.0
23.	.1643	.1412	-146.86	80.25	2.66	35.55	95.0
14.	.1552	.1548	-168.78	74.91	-17.95	42.27	100.0
9.	.1665	.1476	175.26	73.80	-48.16	34.62	105.0
3.	.2437	.1366	-144.82	66.77	-50.27	35.03	110.0
2.	.1972	.0491	168.35	78.41	-47.64	37.35	115.0
	TERMINAL VALUES AT 10 MS INTERVALS						
49.	1.4180	.4823	45.52	72.71	68.73	28.88	-40.0
49.	1.0386	.4478	105.66	84.56	78.90	33.96	-30.0
49.	.5894	.2498	179.47	65.73	70.89	30.95	-20.0
49.	.2381	.1239	163.21	75.08	63.73	46.04	-10.0

QRS WAVE FOR FEMALE AGE 45 HELM LEAD SYSTEM
AVERAGE AGE IS 44.5

N	SMAG	SDSM	ALPHA	SDA	TILT	SDT	TIME
60.	.0339	.0138	142.83	102.18	-83.58	48.38	5.0
60.	.1220	.0602	-142.07	73.48	-78.08	25.21	10.0
60.	.2559	.0945	-158.68	86.00	-84.46	23.75	15.0
60.	.3605	.1421	27.14	80.36	-76.07	23.16	20.0
60.	.4947	.1815	30.17	42.40	-44.90	25.94	25.0
60.	.7742	.2819	32.77	15.50	-12.16	24.28	30.0
60.	1.1952	.3775	35.61	13.58	8.33	18.92	35.0
60.	1.5765	.3855	38.15	27.93	20.77	16.38	40.0
60.	1.6928	.4620	42.24	26.11	30.94	16.50	45.0
60.	1.4516	.4711	48.65	47.69	46.10	17.99	50.0
60.	1.1260	.4352	64.00	65.94	65.53	20.36	55.0
60.	.8364	.3454	117.53	86.40	77.69	23.99	60.0
60.	.5802	.2636	172.03	73.60	75.78	27.47	65.0
60.	.3810	.1913	-158.92	76.08	70.62	34.28	70.0
58.	.2454	.1421	-145.01	71.43	60.82	42.48	75.0
49.	.1743	.1008	-149.73	71.55	43.90	47.79	80.0
38.	.1222	.0719	-163.92	74.97	44.27	49.47	85.0
26.	.0847	.0495	-151.90	82.27	-4.16	47.31	90.0
8.	.0851	.0451	169.41	86.86	36.68	51.21	95.0
3.	.0816	.0396	-86.71	100.64	11.24	36.13	100.0
	TERMINAL VALUES AT 10 MS INTERVALS						
60.	1.4810	.4999	45.39	49.17	39.22	21.84	-40.0
60.	1.0935	.5263	86.91	79.29	73.34	25.93	-30.0
60.	.5535	.2960	-159.46	83.54	75.56	31.97	-20.0
60.	.1999	.0955	-153.82	75.80	62.68	44.15	-10.0



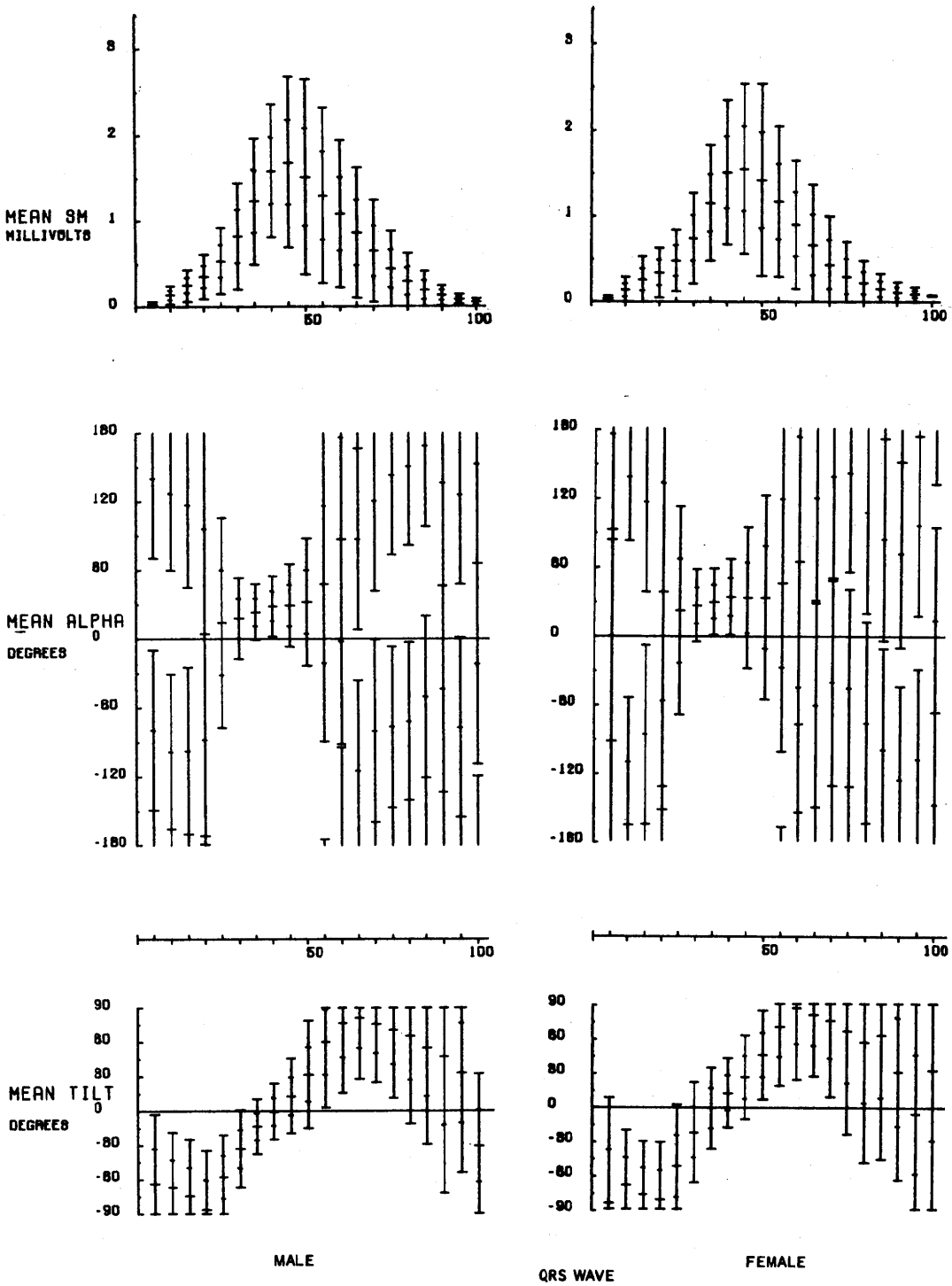
T WAVE
AGE 45 HELM LEAD SYSTEM

T WAVE FOR MALE AGE 45 HELM LEAD SYSTEM
AVERAGE AGE IS 45.1

N	SMAG	SDSM	ALPHA	SDA	TILT	SDT	TIME
49.	.0913	.0420	-166.25	93.75	-69.44	50.28	2.0
49.	.0922	.0423	-167.50	88.49	-79.92	40.59	4.0
49.	.1014	.0460	-118.79	94.53	-83.47	39.62	6.0
49.	.1147	.0446	-62.73	101.99	-85.89	33.80	8.0
49.	.1196	.0454	-17.15	86.15	-80.63	27.50	10.0
49.	.1306	.0537	3.29	82.51	-77.23	23.07	12.0
49.	.1367	.0558	8.25	76.18	-75.11	19.33	14.0
49.	.1501	.0629	12.37	66.08	-70.31	19.21	16.0
49.	.1593	.0673	20.94	61.67	-66.42	16.92	18.0
49.	.1761	.0723	20.39	59.43	-63.62	17.17	20.0
49.	.1972	.0860	24.11	53.06	-60.26	15.09	22.0
49.	.2223	.0974	22.18	46.30	-57.85	16.08	24.0
49.	.2548	.1105	27.41	37.98	-55.47	15.52	26.0
49.	.2891	.1278	28.38	32.63	-52.48	15.27	28.0
49.	.3398	.1371	31.10	25.76	-50.48	14.08	30.0
49.	.3833	.1474	29.93	17.45	-45.71	15.43	32.0
49.	.4436	.1613	31.85	18.52	-46.02	15.01	34.0
49.	.4926	.1706	32.05	18.65	-42.29	15.25	36.0
49.	.5313	.1792	34.28	18.17	-40.49	13.82	38.0
49.	.5575	.1790	34.86	17.89	-38.62	14.10	40.0
49.	.5651	.1845	35.41	17.58	-36.16	14.66	42.0
49.	.5484	.1811	37.98	17.76	-34.36	14.57	44.0
49.	.4993	.1702	39.80	18.29	-32.19	14.33	46.0
49.	.4203	.1607	41.61	19.75	-30.48	14.26	48.0
49.	.3304	.1416	43.18	23.78	-30.81	14.34	50.0
49.	.2474	.1121	46.62	31.75	-29.87	18.57	52.0
49.	.1719	.0810	52.72	40.64	-34.08	19.39	54.0
49.	.1234	.0616	53.33	49.45	-37.79	25.09	56.0
49.	.0934	.0497	60.63	65.20	-48.10	33.89	58.0
49.	.0752	.0431	72.93	87.38	-64.79	46.57	60.0

T WAVE FOR FEMALE AGE 45 HELM LEAD SYSTEM
AVERAGE AGE IS 44.5

N	SMAG	SDSM	ALPHA	SDA	TILT	SDT	TIME
60.	.0782	.0368	-132.11	80.65	-56.13	38.64	2.0
60.	.0869	.0343	-123.00	79.99	-64.07	36.50	4.0
60.	.0869	.0396	-104.01	82.51	-63.82	32.24	6.0
60.	.0917	.0396	-106.08	89.11	-72.48	36.40	8.0
60.	.0922	.0438	-94.26	95.92	-77.70	38.61	10.0
60.	.0939	.0458	-63.47	86.15	-75.03	39.56	12.0
60.	.0957	.0471	-46.14	83.07	-78.59	38.62	14.0
60.	.1036	.0489	-19.40	83.74	-75.14	39.99	16.0
60.	.1019	.0500	-11.09	78.87	-70.92	37.74	18.0
60.	.1113	.0559	17.42	78.57	-72.57	32.36	20.0
60.	.1169	.0570	12.92	66.30	-61.21	27.91	22.0
60.	.1310	.0604	23.08	62.19	-58.45	25.36	24.0
60.	.1450	.0691	24.69	52.85	-49.61	21.52	26.0
60.	.1674	.0762	28.70	51.66	-45.61	22.84	28.0
60.	.1933	.0919	26.38	42.07	-39.88	20.88	30.0
60.	.2333	.1028	29.32	37.82	-35.58	19.20	32.0
60.	.2766	.1209	30.93	31.55	-30.10	18.78	34.0
60.	.3207	.1356	30.56	31.03	-27.11	17.23	36.0
60.	.3694	.1495	33.21	23.46	-22.63	17.14	38.0
60.	.4081	.1594	32.82	25.79	-18.74	19.26	40.0
60.	.4371	.1673	34.96	23.34	-17.41	17.49	42.0
60.	.4549	.1705	36.50	19.46	-14.80	16.95	44.0
60.	.4454	.1645	38.48	16.74	-12.92	16.63	46.0
60.	.4068	.1516	40.05	17.08	-12.47	15.85	48.0
60.	.3351	.1264	43.74	16.76	-13.82	15.90	50.0
60.	.2524	.0946	48.31	21.23	-15.97	15.83	52.0
60.	.1808	.0744	50.31	31.86	-18.66	17.92	54.0
60.	.1265	.0607	56.16	41.06	-25.03	24.00	56.0
60.	.0978	.0628	58.28	59.26	-29.14	30.24	58.0
60.	.0801	.0549	71.11	75.23	-34.56	35.32	60.0



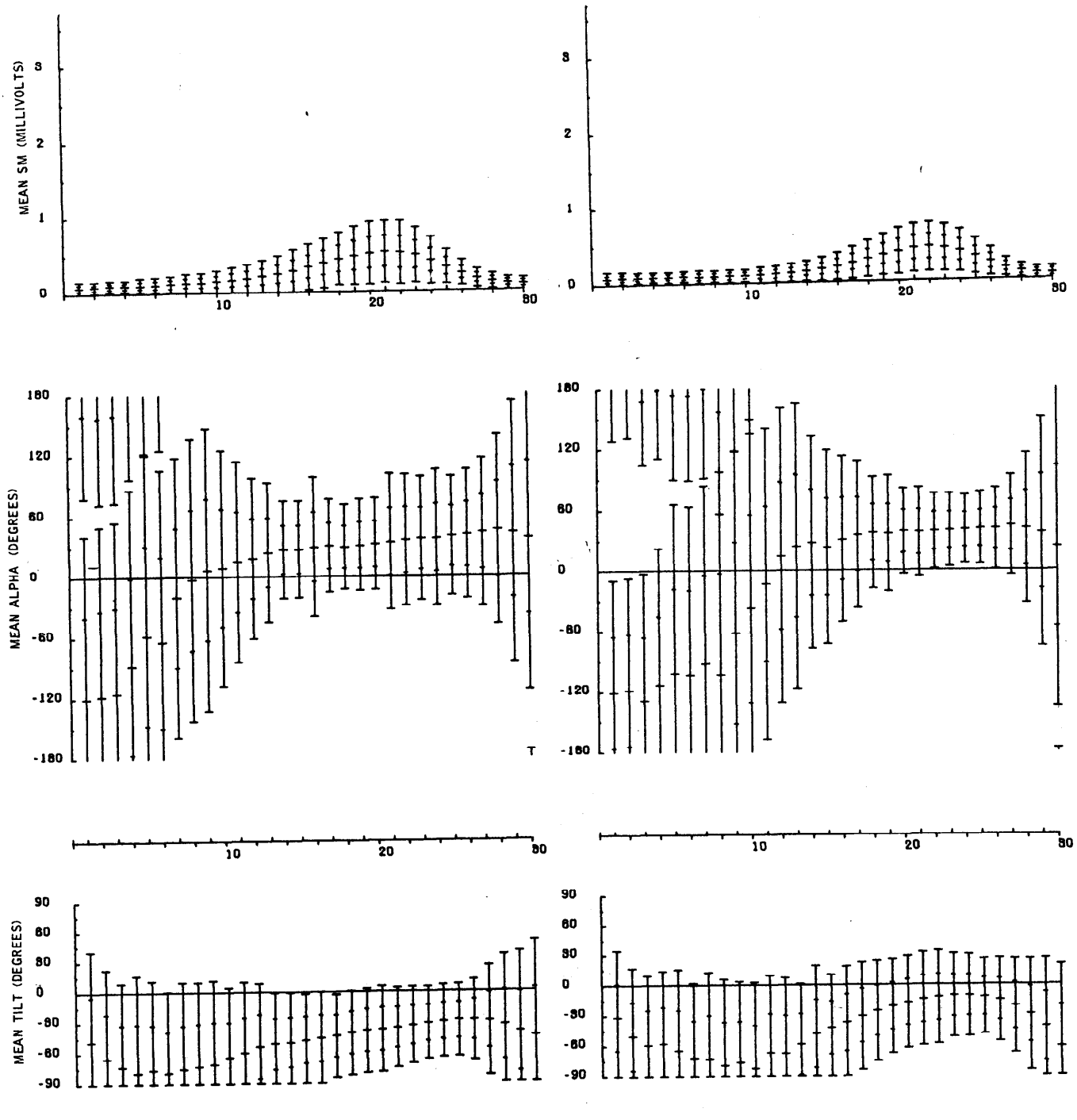
QRS WAVE
AGE 55 HELM LEAD SYSTEM

QRS WAVE FOR MALE AGE 55 HELM LEAD SYSTEM
AVERAGE AGE IS 53.9

N	SMAG	SDSM	ALPHA	SDA	TILT	SDT	TIME
34.	.0340	.0140	-149.58	69.87	-63.87	30.56	5.0
34.	.1356	.0534	-165.52	67.38	-66.73	24.02	10.0
34.	.2478	.0915	-170.12	72.63	-74.35	24.78	15.0
34.	.3502	.1300	4.29	91.89	-86.12	25.72	20.0
34.	.5309	.1929	14.30	45.80	-57.78	18.57	25.0
34.	.8197	.3108	18.00	17.51	-33.11	16.78	30.0
34.	1.2257	.3688	23.39	12.16	-13.84	11.98	35.0
34.	1.5848	.3897	28.57	13.06	-.45	12.05	40.0
34.	1.6846	.4974	29.42	18.09	12.96	16.41	45.0
34.	1.5101	.5680	32.26	27.74	31.84	23.53	50.0
34.	1.2930	.5127	47.75	68.59	59.79	28.49	55.0
34.	1.0789	.4299	86.86	89.20	76.54	30.33	60.0
34.	.8608	.3784	166.14	78.90	81.16	26.52	65.0
34.	.6458	.2968	-159.52	79.40	75.95	25.69	70.0
34.	.4360	.2212	-146.81	70.00	70.42	29.73	75.0
33.	.2913	.1638	-140.47	68.75	55.42	38.22	80.0
29.	.1900	.1105	-120.78	70.34	54.42	41.86	85.0
23.	.1293	.0578	-133.55	90.16	47.03	59.37	90.0
13.	.0842	.0257	-155.44	78.32	33.20	43.42	95.0
7.	.0459	.0236	65.70	87.38	-30.81	31.36	100.0
	TERMINAL VALUES AT 10 MS INTERVALS						
34.	1.3981	.4763	34.23	64.68	46.11	28.08	-40.0
34.	.9852	.4233	104.92	87.58	82.45	34.48	-30.0
34.	.5692	.2448	-138.25	69.05	71.44	28.26	-20.0
34.	.2037	.0872	-127.13	77.60	54.86	40.96	-10.0

QRS WAVE FOR FEMALE AGE 55 HELM LEAD SYSTEM
AVERAGE AGE IS 54.0

N	SMAG	SDSM	ALPHA	SDA	TILT	SDT	TIME
33.	.0376	.0156	-93.19	92.28	-84.48	46.00	5.0
33.	.1384	.0755	-166.58	55.89	-69.34	24.23	10.0
33.	.2610	.1328	-165.75	78.55	-77.24	23.37	15.0
33.	.3404	.1463	37.18	95.17	-81.38	25.01	20.0
33.	.4803	.1788	20.90	45.40	-52.39	27.13	25.0
33.	.7433	.2643	25.53	15.88	-23.03	21.87	30.0
33.	1.1543	.3384	28.79	14.52	-1.85	17.73	35.0
33.	1.5089	.4207	32.98	16.40	11.58	15.22	40.0
33.	1.5538	.4954	32.24	30.58	25.58	18.52	45.0
33.	1.4189	.5615	32.55	44.50	45.21	19.48	50.0
33.	1.1707	.4400	45.16	73.41	69.75	25.99	55.0
33.	.9012	.3751	63.52	109.33	86.14	31.38	60.0
33.	.6638	.3549	-151.09	89.43	80.61	27.11	65.0
33.	.4343	.2838	-131.73	90.50	75.08	33.31	70.0
32.	.2948	.2016	-133.02	86.22	65.94	45.52	75.0
28.	.2193	.1291	-165.22	88.15	56.34	53.04	80.0
24.	.1490	.0900	171.31	88.35	62.33	54.53	85.0
18.	.1102	.0591	151.91	81.45	30.24	47.36	90.0
12.	.0888	.0423	174.78	78.25	-7.10	52.28	95.0
2.	.0746	.0043	-66.23	80.68	31.32	61.10	100.0
	TERMINAL VALUES AT 10 MS INTERVALS						
33.	1.3671	.5140	32.98	65.18	44.71	27.84	-40.0
33.	.9684	.4758	50.98	99.20	78.92	33.84	-30.0
33.	.5041	.2820	-160.91	90.71	76.20	38.22	-20.0
33.	.1969	.1135	-143.09	91.30	65.78	48.89	-10.0



T WAVE
AGE 55 HELM LEAD SYSTEM

T WAVE FOR MALE AGE 55 HELM LEAD SYSTEM
AVERAGE AGE IS 53.9

N	SMAG	SDSM	ALPHA	SDA	TILT	SDT	TIME
34.	.0795	.0387	-120.44	80.69	-69.07	44.85	2.0
34.	.0870	.0365	-118.61	84.55	-65.02	43.58	4.0
34.	.0951	.0396	-115.77	85.19	-73.35	41.25	6.0
34.	.0960	.0394	-88.74	87.39	-79.85	48.15	8.0
34.	.1028	.0463	-58.46	89.59	-76.63	44.13	10.0
34.	.1094	.0498	-64.67	85.21	-79.30	40.06	12.0
34.	.1168	.0527	-20.51	69.18	-75.77	42.84	14.0
34.	.1269	.0606	-3.32	69.80	-73.34	41.54	16.0
34.	.1329	.0638	7.08	70.05	-71.35	41.39	18.0
34.	.1454	.0709	8.93	58.33	-64.74	34.56	20.0
34.	.1637	.0851	14.64	49.70	-60.35	35.18	22.0
34.	.1816	.0956	18.02	39.59	-54.15	31.38	24.0
34.	.2060	.1061	23.96	34.66	-51.10	25.11	26.0
34.	.2407	.1213	26.70	24.05	-50.01	24.47	28.0
34.	.2803	.1379	27.05	24.12	-47.73	22.67	30.0
34.	.3276	.1493	29.34	34.44	-45.93	22.94	32.0
34.	.3775	.1617	30.51	22.99	-43.77	20.47	34.0
34.	.4333	.1727	28.97	21.00	-40.72	20.86	36.0
34.	.4731	.1915	31.12	22.71	-38.36	20.80	38.0
34.	.5048	.2065	31.93	22.84	-37.35	21.24	40.0
34.	.5215	.2052	34.04	33.48	-35.69	19.69	42.0
34.	.5122	.2088	35.67	32.33	-33.39	18.93	44.0
34.	.4774	.1821	37.13	30.50	-31.23	17.92	46.0
34.	.4015	.1536	37.87	33.41	-29.89	17.77	48.0
34.	.3143	.1127	39.42	29.41	-28.66	17.73	50.0
34.	.2317	.0825	41.12	31.95	-28.22	19.84	52.0
34.	.1606	.0579	43.25	36.56	-28.89	27.31	54.0
34.	.1193	.0502	45.89	46.82	-33.03	34.38	56.0
34.	.0874	.0413	43.08	64.53	-39.84	39.36	58.0
34.	.0769	.0407	37.31	75.24	-44.58	47.58	60.0

T WAVE FOR FEMALE AGE 55 HELM LEAD SYSTEM
AVERAGE AGE IS 54.0

N	SMAG	SDSM	ALPHA	SDA	TILT	SDT	TIME
33.	.0801	.0430	-120.65	55.45	-31.54	33.00	2.0
33.	.0906	.0396	-118.39	55.31	-50.24	33.64	4.0
33.	.0903	.0354	-129.05	63.18	-59.27	34.55	6.0
33.	.0949	.0331	-113.25	67.86	-57.86	36.14	8.0
33.	.0919	.0357	-101.83	83.94	-64.64	40.12	10.0
33.	.0987	.0365	-103.23	83.63	-72.19	37.14	12.0
33.	.0940	.0410	-92.31	87.97	-72.48	42.48	14.0
33.	.0949	.0388	-103.19	100.25	-79.76	42.79	16.0
33.	.0967	.0435	-61.90	90.35	-76.17	40.10	18.0
33.	.1037	.0403	-37.72	93.40	-82.47	42.71	20.0
33.	.1075	.0525	-13.27	76.97	-66.94	38.37	22.0
33.	.1166	.0540	14.48	72.88	-67.28	37.34	24.0
33.	.1309	.0613	24.11	70.74	-58.47	30.09	26.0
33.	.1509	.0649	27.87	52.49	-48.25	33.79	28.0
33.	.1756	.0760	23.00	48.01	-41.97	26.37	30.0
33.	.2074	.0898	31.04	41.02	-37.06	28.01	32.0
33.	.2522	.1046	35.43	36.39	-30.57	26.69	34.0
33.	.2987	.1209	37.39	27.54	-25.51	24.69	36.0
33.	.3526	.1352	36.56	28.60	-21.00	23.23	38.0
33.	.3942	.1524	38.76	21.11	-16.99	22.62	40.0
33.	.4287	.1610	37.95	22.03	-14.05	23.16	42.0
33.	.4460	.1638	38.80	18.60	-12.33	22.94	44.0
33.	.4293	.1534	39.63	18.04	-10.65	20.71	46.0
33.	.3941	.1404	40.26	16.86	-10.54	20.42	48.0
33.	.3171	.1164	41.41	17.80	-11.85	18.64	50.0
33.	.2351	.0918	40.96	20.12	-14.73	20.59	52.0
33.	.1609	.0610	44.03	24.67	-21.31	23.25	54.0
33.	.1082	.0453	41.28	37.05	-29.56	27.43	56.0
33.	.0801	.0381	37.65	56.61	-41.38	33.78	58.0
33.	.0727	.0438	23.38	79.68	-61.15	40.56	60.0

Appendix V

Detailed Tables* for Age 35 for the Frank Lead System in Spherical Coordinates.

*See text Section 5 for a note on accuracy of data.

P WAVE FOR MALE AGE 35 FRANK LEAD SYSTEM
AVERAGE AGE IS 35.3

N	SMAG	SDSM	ALPHA	SDA	TILT	SDT	TIME
56.	.0215	.0139	23.72	95.08	-1.79	44.15	1.0
56.	.0199	.0090	7.41	89.88	-18.47	46.36	2.0
56.	.0250	.0142	93.67	79.63	-35.36	41.12	3.0
56.	.0277	.0140	104.08	82.93	-32.58	42.57	4.0
56.	.0300	.0154	81.90	61.18	-36.85	29.80	5.0
56.	.0358	.0173	93.59	60.46	-37.10	21.83	6.0
56.	.0399	.0188	89.08	56.63	-25.78	24.13	7.0
56.	.0413	.0220	90.76	61.23	-28.73	29.19	8.0
56.	.0446	.0226	92.42	53.95	-24.17	27.04	9.0
56.	.0466	.0215	85.19	54.83	-30.32	19.05	10.0
56.	.0459	.0230	84.13	45.77	-22.49	27.38	11.0
56.	.0471	.0241	77.23	49.78	-22.64	20.65	12.0
56.	.0524	.0290	75.20	46.47	-21.30	20.78	13.0
56.	.0520	.0249	73.76	48.77	-13.64	18.93	14.0
56.	.0541	.0270	75.20	37.93	-17.43	17.85	15.0
56.	.0577	.0280	73.22	42.35	-20.78	18.64	16.0
56.	.0618	.0295	73.90	36.91	-22.35	14.26	17.0
56.	.0639	.0309	73.39	35.93	-22.11	19.83	18.0
56.	.0651	.0271	78.16	31.25	-22.57	18.71	19.0
56.	.0725	.0303	80.14	33.73	-26.85	17.52	20.0
56.	.0773	.0284	80.68	37.62	-24.35	16.10	21.0
56.	.0788	.0293	82.02	32.56	-23.66	15.43	22.0
56.	.0841	.0282	84.01	35.12	-25.40	13.98	23.0
56.	.0884	.0288	81.07	29.65	-25.16	13.04	24.0
56.	.0895	.0304	81.19	29.06	-25.33	14.12	25.0
56.	.0883	.0305	79.86	28.11	-21.88	13.89	26.0
56.	.0832	.0275	76.16	30.15	-23.86	14.44	27.0
56.	.0860	.0313	76.70	30.32	-21.83	15.25	28.0
56.	.0851	.0251	72.09	34.46	-23.12	12.14	29.0
56.	.0861	.0287	71.00	31.20	-20.19	12.75	30.0
56.	.0881	.0285	71.84	33.78	-21.95	13.18	31.0
56.	.0900	.0291	71.64	32.06	-20.79	15.48	32.0
56.	.0868	.0274	70.81	31.35	-19.40	14.60	33.0
56.	.0867	.0276	68.95	28.60	-20.35	13.46	34.0
56.	.0902	.0265	72.05	29.42	-19.27	13.39	35.0
56.	.0993	.0307	71.24	28.75	-19.57	13.08	36.0
56.	.0991	.0319	71.62	27.50	-20.20	17.18	37.0
56.	.1087	.0337	73.50	26.38	-19.58	13.91	38.0
56.	.1119	.0381	72.78	35.90	-18.00	13.63	39.0
56.	.1164	.0387	74.90	25.70	-15.59	12.78	40.0
56.	.1152	.0363	73.61	27.93	-14.85	13.03	41.0
56.	.1218	.0375	72.37	26.28	-13.22	11.96	42.0
56.	.1183	.0375	71.19	28.05	-12.17	12.44	43.0
56.	.1171	.0377	67.91	28.63	-9.87	12.27	44.0
56.	.1191	.0366	65.85	27.22	-8.57	12.76	45.0
56.	.1197	.0384	64.70	26.48	-6.95	13.80	46.0
56.	.1164	.0370	63.13	25.58	-1.66	11.79	47.0
56.	.1199	.0351	62.18	26.81	-2.25	12.59	48.0
56.	.1169	.0360	59.10	27.27	-.08	12.77	49.0
56.	.1191	.0359	60.87	26.85	1.81	12.72	50.0
56.	.1166	.0364	60.45	29.67	.93	13.84	51.0
56.	.1179	.0347	58.79	26.85	1.05	13.27	52.0
56.	.1172	.0361	59.96	28.10	1.02	16.78	53.0
56.	.1196	.0374	59.74	28.82	.34	14.56	54.0

P WAVE FOR MALE AGE 35 FRANK LEAD SYSTEM (cont.)

56.	.1173	.0405	62.25	26.40	.99	14.75	55.0
56.	.1213	.0384	61.22	29.14	-.80	14.58	56.0
56.	.1191	.0346	60.14	27.82	.86	14.51	57.0
56.	.1176	.0368	61.44	25.01	1.36	15.45	58.0
56.	.1150	.0387	59.42	23.96	3.44	14.76	59.0
56.	.1148	.0406	58.55	24.69	4.84	15.15	60.0
56.	.1139	.0382	55.03	31.04	7.13	14.36	61.0
56.	.1104	.0379	53.37	27.81	7.75	14.66	62.0
56.	.1102	.0363	52.25	29.12	9.99	13.27	63.0
56.	.1084	.0399	50.31	28.62	12.35	13.37	64.0
56.	.1075	.0401	46.27	29.98	13.16	11.47	65.0
56.	.1082	.0397	47.72	29.44	11.02	11.83	66.0
56.	.1051	.0377	46.69	28.66	11.59	12.32	67.0
56.	.1011	.0418	45.74	28.06	12.08	12.11	68.0
56.	.1008	.0368	45.18	30.79	10.64	11.97	69.0
56.	.0991	.0406	45.04	28.76	11.19	13.16	70.0
56.	.0918	.0386	45.65	30.83	9.47	14.56	71.0
56.	.0950	.0398	47.87	28.98	7.39	16.50	72.0
56.	.0919	.0429	49.11	33.36	8.65	19.04	73.0
56.	.0903	.0362	49.23	34.17	8.00	16.90	74.0
56.	.0877	.0344	46.61	34.34	10.28	14.27	75.0
56.	.0858	.0378	47.73	34.43	10.94	16.14	76.0
56.	.0829	.0354	41.06	40.86	12.17	19.44	77.0
56.	.0810	.0372	41.60	38.70	18.01	21.60	78.0
56.	.0762	.0340	37.26	40.05	17.36	22.47	79.0
56.	.0785	.0386	35.89	43.50	21.66	19.60	80.0
56.	.0735	.0333	33.71	39.96	25.37	20.73	81.0
56.	.0679	.0287	37.00	43.25	22.03	20.06	82.0
56.	.0682	.0323	40.63	47.42	26.71	22.32	83.0
56.	.0634	.0345	38.81	44.09	22.04	21.10	84.0
56.	.0585	.0299	39.74	57.11	29.48	22.98	85.0
56.	.0582	.0334	38.22	62.87	25.90	25.97	86.0
55.	.0541	.0310	40.29	62.62	19.90	22.01	87.0
54.	.0504	.0269	38.51	60.88	22.71	28.30	88.0
54.	.0513	.0248	47.72	74.67	25.14	28.88	89.0
54.	.0494	.0221	60.78	73.40	21.96	32.53	90.0
54.	.0499	.0225	59.58	84.35	18.79	30.90	91.0
53.	.0483	.0252	50.89	79.44	19.61	29.93	92.0
52.	.0445	.0227	41.16	81.20	38.54	32.74	93.0
52.	.0432	.0200	32.28	92.23	57.83	41.90	94.0
52.	.0434	.0227	14.04	92.00	56.64	47.24	95.0
52.	.0443	.0180	-26.21	86.10	44.79	46.09	96.0
47.	.0392	.0195	-2.36	82.54	54.05	42.26	97.0
44.	.0431	.0201	-27.05	78.46	52.76	36.94	98.0
42.	.0417	.0192	-28.18	81.92	62.67	46.58	99.0
41.	.0374	.0175	-48.32	89.85	59.30	46.61	100.0
38.	.0398	.0168	-64.18	87.45	61.59	53.75	101.0
38.	.0365	.0158	-67.30	84.21	48.18	41.54	102.0
37.	.0355	.0142	-67.90	88.29	49.06	51.89	103.0
36.	.0358	.0175	-132.23	98.07	42.12	46.55	104.0
35.	.0335	.0184	-126.97	91.69	25.76	38.97	105.0
34.	.0319	.0129	-145.24	87.91	23.94	40.82	106.0
32.	.0325	.0154	-133.85	79.04	32.86	38.49	107.0
29.	.0370	.0212	-130.18	74.85	6.64	38.02	108.0
28.	.0355	.0130	-116.13	86.79	33.28	39.00	109.0
23.	.0338	.0130	-99.09	92.24	48.58	43.56	110.0
17.	.0347	.0144	-127.06	84.38	49.16	64.02	111.0
15.	.0353	.0133	-158.09	69.43	62.89	53.03	112.0
14.	.0422	.0173	-150.87	78.25	41.28	48.18	113.0
12.	.0437	.0185	-73.82	84.27	47.21	41.03	114.0
12.	.0466	.0207	-108.94	63.07	36.99	44.64	115.0
11.	.0377	.0144	-97.02	75.66	6.03	29.68	116.0
10.	.0437	.0134	-76.75	67.54	5.79	30.57	117.0
8.	.0391	.0094	-101.68	53.96	24.43	29.40	118.0
8.	.0425	.0200	-98.81	55.31	23.77	27.77	119.0
8.	.0423	.0207	-118.21	26.93	14.88	29.31	120.0
7.	.0369	.0202	-118.16	60.61	20.32	34.93	121.0
7.	.0408	.0116	-116.01	38.85	-4.14	32.60	122.0
7.	.0327	.0068	-118.27	27.62	2.76	30.81	123.0
6.	.0418	.0218	-120.61	22.94	8.59	21.12	124.0
6.	.0443	.0241	-114.96	29.49	11.21	22.11	125.0

QRS WAVE FOR MALE AGE 35 FRANK LEAD SYSTEM
AVERAGE AGE IS 35.3

N	SMAG	SDSM	ALPHA	SDA	TILT	SDT	TIME
56.	.0247	.0137	-59.26	98.90	-33.43	42.08	1.0
56.	.0243	.0116	-87.78	93.83	-39.08	52.65	2.0
56.	.0277	.0130	-95.30	90.63	-53.27	48.89	3.0
56.	.0314	.0164	-114.52	75.37	-52.58	37.50	4.0
56.	.0396	.0205	-124.21	72.03	-58.73	33.98	5.0
56.	.0500	.0237	-150.60	68.71	-60.19	29.09	6.0
56.	.0632	.0298	-148.84	68.73	-63.53	27.15	7.0
56.	.0786	.0410	-146.89	61.38	-62.50	26.70	8.0
56.	.0948	.0482	-153.91	59.28	-62.22	23.28	9.0
56.	.1145	.0601	-146.08	54.68	-63.64	20.68	10.0
56.	.1304	.0718	-142.52	54.23	-62.64	20.14	11.0
56.	.1535	.0854	-136.72	58.70	-64.97	19.91	12.0
56.	.1730	.1043	-137.90	62.42	-67.38	19.22	13.0
56.	.1931	.1185	-135.72	70.26	-68.61	19.77	14.0
56.	.2117	.1298	-135.67	72.59	-71.12	19.95	15.0
56.	.2280	.1399	-137.04	84.96	-75.62	20.70	16.0
56.	.2465	.1533	-139.56	89.03	-79.25	20.94	17.0
56.	.2676	.1606	-126.92	90.53	-81.11	22.78	18.0
56.	.2798	.1617	-102.15	93.49	-85.26	25.87	19.0
56.	.2959	.1649	-55.94	98.72	-86.29	26.76	20.0
56.	.3166	.1719	-.40	90.26	-83.34	26.34	21.0
56.	.3373	.1740	2.89	87.49	-78.49	24.53	22.0
56.	.3564	.1722	10.09	86.00	-74.08	23.37	23.0
56.	.3843	.1725	14.42	84.55	-69.02	22.68	24.0
56.	.4119	.1809	18.50	78.41	-63.95	22.66	25.0
56.	.4429	.1945	21.15	66.17	-58.39	22.92	26.0
56.	.4838	.2064	23.14	58.00	-52.64	23.61	27.0
56.	.5265	.2222	23.58	49.32	-47.39	23.63	28.0
56.	.5719	.2383	25.38	40.63	-41.21	23.13	29.0
56.	.6212	.2522	26.22	37.62	-35.98	22.26	30.0
56.	.6837	.2676	27.34	33.84	-30.83	21.51	31.0
56.	.7503	.2840	28.21	29.53	-25.96	20.83	32.0
56.	.8248	.3041	29.39	27.18	-21.86	20.35	33.0
56.	.8977	.3237	30.51	26.37	-18.03	19.37	34.0
56.	.9739	.3443	31.48	25.01	-14.58	18.94	35.0
56.	1.0526	.3553	32.67	24.03	-11.51	18.92	36.0
56.	1.1256	.3644	33.53	16.22	-8.70	18.58	37.0
56.	1.1994	.3714	34.06	14.84	-5.96	17.91	38.0
56.	1.2727	.3868	34.57	14.57	-3.62	17.34	39.0
56.	1.3379	.4029	35.41	14.34	-1.59	16.90	40.0
56.	1.3991	.4231	35.74	14.61	.35	16.42	41.0
56.	1.4512	.4464	36.48	14.87	2.11	16.00	42.0
56.	1.4900	.4635	36.99	15.57	3.74	15.95	43.0
56.	1.5274	.4833	37.26	16.11	5.65	15.83	44.0
56.	1.5409	.4983	37.90	16.48	7.48	15.57	45.0
56.	1.5482	.5155	38.32	16.70	9.20	15.75	46.0
56.	1.5485	.5429	38.86	17.29	11.28	15.97	47.0
56.	1.5302	.5600	39.38	17.79	13.63	16.50	48.0
56.	1.5011	.5765	40.33	18.70	16.42	17.54	49.0
56.	1.4550	.5850	40.84	20.07	19.23	18.60	50.0
56.	1.4137	.5921	42.04	21.96	22.85	19.74	51.0
56.	1.3669	.5834	44.00	24.77	26.71	21.26	52.0
56.	1.3168	.5606	45.73	28.46	30.82	22.39	53.0
56.	1.2634	.5382	47.97	32.95	34.73	23.28	54.0

QRS WAVE FOR MALE AGE 35 FRANK LEAD SYSTEM

56.	1.2070	.5002	50.16	41.71	38.25	23.93	55.0
56.	1.1480	.4771	52.76	44.62	42.17	23.67	56.0
56.	1.0903	.4587	55.88	47.02	46.22	23.15	57.0
56.	1.0283	.4272	59.40	49.29	50.23	23.19	58.0
56.	.9822	.4119	64.69	52.20	54.00	23.24	59.0
56.	.9317	.3976	69.12	56.45	58.31	22.67	60.0
56.	.8877	.3838	75.85	59.71	61.66	22.22	61.0
56.	.8450	.3650	84.07	59.44	64.56	22.25	62.0
56.	.8114	.3522	93.44	63.16	66.46	22.79	63.0
56.	.7665	.3373	100.85	67.65	68.11	22.87	64.0
56.	.7290	.3247	110.03	65.45	69.63	22.74	65.0
56.	.6865	.3128	118.40	67.04	70.93	22.83	66.0
56.	.6486	.2996	125.50	68.30	71.45	22.47	67.0
56.	.6120	.2878	136.16	68.54	72.38	22.69	68.0
56.	.5737	.2763	143.22	71.09	74.08	24.74	69.0
56.	.5356	.2621	146.22	72.37	73.61	27.73	70.0
56.	.5056	.2526	152.47	74.71	73.90	28.57	71.0
56.	.4711	.2477	162.37	76.03	73.73	31.31	72.0
56.	.4436	.2407	164.08	77.37	72.71	34.92	73.0
56.	.4161	.2351	161.14	78.40	71.37	37.25	74.0
56.	.3915	.2270	163.18	78.66	73.01	36.46	75.0
56.	.3626	.2157	168.26	77.97	71.55	38.80	76.0
55.	.3369	.2028	172.34	78.45	70.55	40.94	77.0
54.	.3185	.1908	178.28	82.47	72.86	40.24	78.0
53.	.2962	.1850	179.36	80.77	72.93	39.53	79.0
53.	.2764	.1784	169.92	81.56	71.85	41.66	80.0
51.	.2643	.1710	167.24	82.46	73.73	39.20	81.0
51.	.2472	.1672	165.29	85.66	75.13	41.38	82.0
51.	.2277	.1622	156.48	87.66	76.33	43.46	83.0
51.	.2105	.1548	147.39	88.32	76.20	45.13	84.0
51.	.1960	.1475	147.96	90.68	75.42	50.18	85.0
51.	.1795	.1418	127.81	91.33	70.46	49.87	86.0
51.	.1624	.1365	124.08	90.50	68.05	51.39	87.0
51.	.1540	.1295	106.49	93.59	57.81	54.10	88.0
47.	.1481	.1248	128.20	89.38	55.54	54.11	89.0
45.	.1390	.1179	123.60	90.76	29.69	39.18	90.0
41.	.1357	.1144	125.23	89.45	34.82	38.79	91.0
37.	.1302	.1090	127.21	83.48	24.93	29.90	92.0
36.	.1198	.1031	137.88	84.85	28.36	30.66	93.0
30.	.1245	.1034	144.38	87.77	25.58	29.76	94.0
29.	.1166	.1007	153.51	84.77	11.60	45.62	95.0
29.	.1060	.0868	137.68	101.66	-39.15	49.95	96.0
24.	.1158	.0867	-130.04	101.74	-56.17	52.04	97.0
19.	.1177	.0886	165.16	96.26	-41.36	47.02	98.0
14.	.1253	.0902	-160.12	64.61	-31.12	36.84	99.0
13.	.1271	.0910	-176.19	65.82	-21.96	31.20	100.0
11.	.1240	.0865	-137.91	60.05	-35.85	32.96	101.0
8.	.1174	.0892	-123.53	71.17	-14.64	31.11	102.0
8.	.1166	.0870	-129.01	62.49	-16.27	24.12	103.0
8.	.1157	.0784	-125.87	48.49	-16.31	26.09	104.0
7.	.1086	.0726	-128.53	59.43	-42.50	37.43	105.0
7.	.1071	.0635	-138.51	60.16	-40.55	27.47	106.0
7.	.0998	.0570	-118.53	75.86	-47.28	27.45	107.0
5.	.0988	.0613	-125.40	65.25	-49.17	28.64	108.0
5.	.0885	.0543	-123.94	68.12	-39.55	24.94	109.0
3.	.0930	.0508	-120.15	22.37	-19.33	36.08	110.0
3.	.0782	.0388	-135.19	75.40	-41.09	44.61	111.0
3.	.0802	.0257	-159.53	56.43	-45.78	47.69	112.0
3.	.0681	.0141	-147.36	69.81	-43.42	47.29	113.0
2.	.0623	.0184	-159.09	42.53	-19.71	46.02	114.0
2.	.0347	.0110	-148.31	20.54	-12.60	53.77	115.0

T WAVE FOR MALE AGE 35 FRANK LEAD SYSTEM
AVERAGE AGE IS 35.3

N	SMAG	SDSM	ALPHA	SDA	TILT	SDT	TIME
56.	.0734	.0340	-143.49	100.98	-77.25	58.14	1.0
56.	.0731	.0311	-166.21	95.02	-82.61	51.84	2.0
56.	.0713	.0311	-96.27	109.08	-85.49	48.74	3.0
56.	.0796	.0296	-92.08	97.85	-80.71	40.13	4.0
56.	.0872	.0276	-107.25	102.11	-87.35	39.66	5.0
56.	.0895	.0343	-72.75	97.17	-79.93	34.80	6.0
56.	.0936	.0315	-40.49	84.30	-76.93	33.71	7.0
56.	.0977	.0319	-40.58	90.03	-80.57	30.36	8.0
56.	.1029	.0360	-24.06	82.38	-78.95	27.86	9.0
56.	.1036	.0329	-11.43	86.95	-78.69	27.98	10.0
56.	.1020	.0337	-11.92	76.19	-75.22	26.00	11.0
56.	.1122	.0330	1.93	81.79	-73.76	25.63	12.0
56.	.1115	.0366	-1.94	75.79	-73.10	23.72	13.0
56.	.1129	.0408	-.78	70.47	-71.69	23.09	14.0
56.	.1192	.0392	4.99	73.16	-70.11	21.70	15.0
56.	.1269	.0429	7.98	69.24	-70.50	21.01	16.0
56.	.1260	.0450	10.66	68.85	-68.94	20.01	17.0
56.	.1354	.0473	11.77	62.80	-65.42	18.81	18.0
56.	.1383	.0485	15.22	61.06	-66.33	17.28	19.0
56.	.1464	.0506	18.43	61.35	-65.37	15.90	20.0
56.	.1510	.0556	14.97	50.97	-63.59	16.15	21.0
56.	.1623	.0529	18.98	50.06	-61.02	16.59	22.0
56.	.1714	.0583	18.53	53.30	-60.27	15.62	23.0
56.	.1830	.0614	24.79	52.16	-58.46	15.22	24.0
56.	.1913	.0641	23.87	42.94	-57.32	15.83	25.0
56.	.2018	.0676	23.02	34.52	-54.93	14.83	26.0
56.	.2158	.0716	27.09	30.01	-53.71	15.46	27.0
56.	.2322	.0825	28.12	27.61	-52.91	15.24	28.0
56.	.2475	.0825	30.83	24.57	-51.17	14.20	29.0
56.	.2657	.0861	28.75	21.61	-48.86	14.10	30.0
56.	.2860	.0928	31.12	22.09	-48.88	14.62	31.0
56.	.3027	.0959	31.52	18.54	-46.84	13.91	32.0
56.	.3239	.1028	31.27	19.62	-45.43	14.05	33.0
56.	.3484	.1079	32.18	20.30	-44.27	13.19	34.0
56.	.3692	.1158	33.75	18.27	-43.57	12.64	35.0
56.	.3882	.1187	33.52	16.89	-41.44	12.78	36.0
56.	.4119	.1247	34.02	17.29	-40.23	12.44	37.0
56.	.4320	.1294	35.11	15.61	-39.33	12.64	38.0
56.	.4441	.1282	36.00	14.01	-38.19	12.81	39.0
56.	.4582	.1316	34.91	15.81	-37.00	12.74	40.0
56.	.4692	.1339	36.76	14.90	-35.54	12.40	41.0
56.	.4757	.1325	37.61	14.37	-34.38	11.69	42.0
56.	.4766	.1313	37.80	14.46	-33.02	12.32	43.0
56.	.4685	.1307	38.41	14.19	-32.01	11.76	44.0
56.	.4545	.1264	39.57	12.81	-31.40	11.50	45.0
56.	.4402	.1202	41.15	12.45	-30.12	11.03	46.0
56.	.4097	.1195	41.37	13.67	-28.84	10.76	47.0
56.	.3746	.1143	42.54	12.39	-28.27	10.19	48.0
56.	.3371	.1067	44.63	12.93	-28.72	10.04	49.0
56.	.3007	.1020	44.07	16.63	-27.22	10.75	50.0
56.	.2531	.0935	44.69	18.15	-27.72	10.22	51.0
56.	.2161	.0817	48.46	17.57	-29.06	10.45	52.0
56.	.1830	.0706	48.16	23.27	-27.93	11.76	53.0
56.	.1524	.0670	49.34	28.42	-29.92	14.98	54.0
56.	.1275	.0626	51.72	32.59	-31.96	18.60	55.0
56.	.1034	.0508	56.49	40.00	-34.21	16.25	56.0
56.	.0901	.0523	59.18	49.79	-36.55	22.36	57.0
56.	.0793	.0507	56.87	63.04	-42.51	27.46	58.0
56.	.0703	.0490	62.18	69.66	-44.72	32.81	59.0
56.	.0665	.0437	62.80	73.55	-52.51	36.20	60.0

P WAVE FOR FEMALE AGE 35 FRANK LEAD SYSTEM
AVERAGE AGE IS 35.3

N	SMAG	SDSM	ALPHA	SDA	TILT	SDT	TIME
46.	.0170	.0079	-17.78	94.85	30.30	39.24	1.0
46.	.0238	.0135	74.35	80.72	-20.26	38.91	2.0
46.	.0274	.0166	66.06	75.98	-28.90	35.96	3.0
46.	.0271	.0186	60.56	61.32	-32.63	25.12	4.0
46.	.0338	.0229	85.11	48.01	-29.56	26.61	5.0
46.	.0382	.0151	96.08	54.25	-33.86	24.95	6.0
46.	.0405	.0259	91.34	59.72	-38.20	20.94	7.0
46.	.0429	.0288	82.12	41.32	-32.30	22.03	8.0
46.	.0452	.0356	87.40	45.01	-26.86	21.07	9.0
46.	.0474	.0275	89.15	40.51	-20.76	19.88	10.0
46.	.0504	.0313	83.04	46.35	-20.35	19.66	11.0
46.	.0518	.0377	83.17	40.87	-16.41	23.38	12.0
46.	.0555	.0320	69.06	37.84	-23.30	17.80	13.0
46.	.0570	.0374	71.66	39.67	-14.95	16.82	14.0
46.	.0572	.0363	71.96	45.43	-11.44	15.83	15.0
46.	.0596	.0286	75.55	42.15	-17.63	15.63	16.0
46.	.0616	.0254	73.79	32.31	-18.52	20.07	17.0
46.	.0698	.0356	79.80	30.17	-17.99	15.53	18.0
46.	.0773	.0340	79.66	24.58	-18.15	12.59	19.0
46.	.0813	.0318	82.66	24.28	-16.52	12.14	20.0
46.	.0792	.0342	82.54	34.93	-20.59	12.47	21.0
46.	.0819	.0349	77.16	29.43	-20.50	12.01	22.0
46.	.0889	.0372	81.78	28.33	-22.23	11.30	23.0
46.	.0928	.0372	81.83	26.26	-21.44	12.73	24.0
46.	.0910	.0357	82.83	27.59	-20.33	10.41	25.0
46.	.0941	.0399	80.13	24.04	-20.77	9.67	26.0
46.	.0905	.0449	76.34	23.16	-17.19	10.22	27.0
46.	.0926	.0453	79.80	22.77	-18.79	12.29	28.0
46.	.0923	.0478	72.96	26.86	-17.02	11.76	29.0
46.	.0910	.0474	70.60	27.33	-17.09	12.99	30.0
46.	.0915	.0492	70.51	29.85	-15.17	13.26	31.0
46.	.0924	.0477	67.44	29.97	-13.67	13.58	32.0
46.	.0917	.0483	66.87	29.15	-12.55	13.81	33.0
46.	.0896	.0480	65.54	27.51	-11.74	14.42	34.0
46.	.1006	.0507	69.25	26.36	-11.79	14.64	35.0
46.	.1090	.0467	70.29	27.31	-12.49	13.12	36.0
46.	.1108	.0465	70.75	26.06	-11.09	12.99	37.0
46.	.1156	.0515	71.58	26.82	-11.33	10.82	38.0
46.	.1165	.0494	72.48	22.47	-10.08	11.37	39.0
46.	.1203	.0518	73.12	24.59	-9.63	12.57	40.0
46.	.1264	.0562	74.35	27.06	-7.57	12.46	41.0
46.	.1235	.0592	71.78	28.37	-7.01	12.17	42.0
46.	.1256	.0568	71.92	27.85	-6.01	13.33	43.0
46.	.1260	.0534	71.03	28.09	-3.23	13.66	44.0
46.	.1250	.0620	69.16	25.80	-2.28	13.25	45.0
46.	.1287	.0563	67.73	24.97	1.89	12.06	46.0
46.	.1268	.0572	67.99	25.32	2.58	17.49	47.0
46.	.1249	.0549	63.29	28.18	2.49	13.24	48.0
46.	.1241	.0577	63.29	24.54	6.03	15.02	49.0
46.	.1231	.0522	64.08	29.76	5.40	13.17	50.0
46.	.1252	.0533	63.75	26.92	6.87	14.70	51.0
46.	.1255	.0536	62.69	25.00	8.31	13.88	52.0
46.	.1261	.0539	65.09	27.90	7.09	14.55	53.0
46.	.1270	.0510	65.83	23.92	3.47	15.04	54.0

P WAVE FOR FEMALE AGE 35 FRANK LEAD SYSTEM (cont.)

46.	.1222	.0499	65.06	24.06	3.51	16.05	55.0
46.	.1259	.0544	64.65	26.34	5.40	14.69	56.0
46.	.1231	.0516	65.80	25.36	4.25	14.82	57.0
46.	.1233	.0610	66.30	25.36	5.33	15.71	58.0
46.	.1237	.0617	65.89	26.45	1.60	13.36	59.0
46.	.1184	.0559	63.19	27.78	3.61	13.13	60.0
46.	.1216	.0585	60.41	30.33	6.03	17.20	61.0
46.	.1145	.0596	63.32	31.78	6.16	13.00	62.0
46.	.1109	.0601	59.92	28.39	6.18	12.98	63.0
46.	.1108	.0587	55.06	36.00	8.36	14.34	64.0
46.	.1109	.0592	51.30	36.01	9.02	12.51	65.0
46.	.1078	.0574	53.93	34.11	10.19	13.61	66.0
46.	.1054	.0587	52.71	37.09	13.65	14.93	67.0
46.	.1034	.0570	51.73	37.83	9.95	16.03	68.0
46.	.0974	.0536	50.55	45.26	7.51	19.43	69.0
46.	.0972	.0526	55.21	40.34	11.97	16.53	70.0
46.	.0936	.0550	57.34	45.45	8.05	15.95	71.0
46.	.0895	.0569	55.02	39.25	7.25	22.57	72.0
46.	.0888	.0554	63.29	41.13	5.28	22.65	73.0
46.	.0847	.0538	57.56	44.82	9.85	22.01	74.0
46.	.0834	.0533	61.57	46.67	6.64	24.86	75.0
46.	.0792	.0531	66.99	43.80	8.51	23.17	76.0
44.	.0764	.0530	60.63	47.40	7.96	22.09	77.0
44.	.0754	.0551	53.60	47.92	6.13	25.85	78.0
44.	.0651	.0491	49.93	53.20	3.53	22.88	79.0
44.	.0659	.0506	50.90	50.62	10.87	29.43	80.0
44.	.0667	.0426	42.08	51.08	18.97	25.47	81.0
44.	.0605	.0368	43.83	64.93	18.56	24.43	82.0
44.	.0592	.0400	38.50	60.06	20.58	27.89	83.0
44.	.0550	.0351	32.73	72.61	20.43	32.92	84.0
43.	.0520	.0371	44.12	77.97	22.53	30.65	85.0
43.	.0501	.0357	43.73	77.65	26.04	36.75	86.0
43.	.0484	.0344	47.83	84.86	16.96	32.75	87.0
40.	.0475	.0318	68.47	90.58	18.47	35.17	88.0
39.	.0410	.0297	99.98	89.85	-17.77	30.57	89.0
37.	.0404	.0295	101.11	88.91	-35.84	37.05	90.0
37.	.0395	.0278	117.51	85.75	-6.68	34.44	91.0
36.	.0429	.0312	126.15	76.49	-12.29	33.53	92.0
36.	.0435	.0352	157.03	93.76	19.35	33.99	93.0
33.	.0383	.0252	129.55	83.88	4.22	30.89	94.0
32.	.0417	.0264	135.22	82.80	9.16	37.26	95.0
30.	.0419	.0347	146.74	85.99	71.24	56.91	96.0
28.	.0431	.0255	-72.79	104.85	67.13	66.37	97.0
24.	.0366	.0267	-66.65	89.32	57.70	48.10	98.0
22.	.0387	.0273	-103.86	93.55	41.22	40.70	99.0
20.	.0333	.0257	-68.29	94.33	56.59	50.83	100.0
20.	.0313	.0240	178.32	85.77	27.79	33.85	101.0
20.	.0374	.0232	167.66	83.08	47.98	53.47	102.0
19.	.0394	.0239	-141.31	89.99	49.39	51.71	103.0
18.	.0397	.0217	-169.22	79.21	-17.71	35.96	104.0
17.	.0393	.0243	-136.43	85.75	-11.78	36.28	105.0
16.	.0349	.0200	-156.01	82.37	-3.03	36.04	106.0
14.	.0422	.0222	-168.44	71.99	-13.46	32.81	107.0
13.	.0331	.0213	-143.26	86.05	-56.64	37.52	108.0
11.	.0335	.0170	-148.26	86.42	-55.20	32.50	109.0
9.	.0370	.0224	-82.68	71.09	3.17	32.00	110.0
9.	.0359	.0219	-151.19	67.73	-2.06	41.29	111.0
8.	.0441	.0155	-77.90	87.18	35.02	39.64	112.0
6.	.0382	.0138	-99.71	90.18	-5.80	12.82	113.0
5.	.0342	.0158	-71.23	80.71	5.42	33.19	114.0
4.	.0352	.0139	-56.12	53.05	-20.51	42.79	115.0
4.	.0275	.0082	-68.94	64.51	-16.05	39.26	116.0
3.	.0242	.0084	61.86	88.55	-79.43	47.99	117.0
3.	.0302	.0146	30.93	88.36	-42.44	53.14	118.0
2.	.0262	.0082	-94.24	56.58	24.28	41.69	119.0
2.	.0369	.0173	118.86	56.28	-43.94	22.05	120.0
2.	.0376	.0133	111.39	45.79	-14.19	37.91	121.0
2.	.0309	.0001	-164.26	84.92	13.39	15.03	122.0
2.	.0372	.0072	106.17	49.30	-31.92	31.45	123.0
2.	.0430	.0216	-20.98	64.66	5.26	4.65	124.0
2.	.0329	.0189	-135.09	58.55	32.21	45.99	125.0

QRS WAVE FOR FEMALE AGE 35 FRANK LEAD SYSTEM
AVERAGE AGE IS 35.4

N	SMAG	SDSM	ALPHA	SDA	TILT	SDT	TIME
47.	.0205	.0094	-77.35	84.27	-20.92	29.57	1.0
47.	.0220	.0101	-78.05	78.89	-34.59	41.22	2.0
47.	.0259	.0104	-97.92	86.31	-44.96	42.95	3.0
47.	.0306	.0134	-114.11	89.34	-62.39	42.38	4.0
47.	.0340	.0144	-136.60	76.16	-62.48	35.44	5.0
47.	.0456	.0185	-107.55	67.87	-56.27	29.83	6.0
47.	.0591	.0238	-112.46	67.33	-58.71	30.82	7.0
47.	.0726	.0317	-115.30	70.11	-61.86	25.33	8.0
47.	.0894	.0365	-124.27	62.94	-63.38	24.84	9.0
47.	.1064	.0432	-123.77	67.84	-64.86	23.69	10.0
47.	.1259	.0532	-120.32	65.87	-67.06	23.58	11.0
47.	.1440	.0636	-129.93	68.66	-68.90	25.79	12.0
47.	.1621	.0738	-132.96	76.63	-72.75	24.20	13.0
47.	.1798	.0798	-129.75	84.96	-75.80	25.09	14.0
47.	.1975	.0870	-132.70	88.84	-78.13	28.58	15.0
47.	.2067	.0924	-116.98	84.28	-80.39	30.35	16.0
47.	.2195	.0937	-105.40	98.27	-85.10	31.16	17.0
47.	.2320	.0995	-44.15	104.70	-87.41	32.57	18.0
47.	.2451	.1015	.86	92.97	-82.51	29.13	19.0
47.	.2582	.1041	9.83	87.84	-77.78	26.28	20.0
47.	.2758	.1098	13.13	76.44	-72.21	24.26	21.0
47.	.2961	.1226	14.54	68.39	-66.11	23.77	22.0
47.	.3201	.1358	17.18	62.19	-60.84	22.97	23.0
47.	.3491	.1539	20.93	52.77	-54.66	22.82	24.0
47.	.3838	.1703	21.36	43.20	-47.96	23.08	25.0
47.	.4211	.1841	24.09	35.70	-42.23	22.75	26.0
47.	.4676	.2005	25.35	26.01	-36.61	22.46	27.0
47.	.5143	.2186	26.87	20.60	-30.88	22.06	28.0
47.	.5692	.2379	28.85	16.57	-25.52	20.61	29.0
47.	.6298	.2553	30.07	14.78	-20.28	20.01	30.0
47.	.6934	.2736	31.12	13.17	-15.24	18.61	31.0
47.	.7625	.2912	32.70	12.35	-11.09	17.76	32.0
47.	.8332	.3104	34.30	11.48	-7.24	16.65	33.0
47.	.9087	.3207	34.79	11.54	-4.27	15.21	34.0
47.	.9776	.3284	35.65	11.25	-1.58	14.46	35.0
47.	1.0444	.3324	36.92	10.69	.79	13.66	36.0
47.	1.1051	.3433	38.05	10.94	3.24	13.14	37.0
47.	1.1582	.3451	38.79	11.05	5.61	12.56	38.0
47.	1.2033	.3540	39.80	11.35	7.75	12.62	39.0
47.	1.2396	.3595	40.59	11.71	10.08	12.58	40.0
47.	1.2694	.3743	40.97	12.39	12.25	12.95	41.0
47.	1.2906	.3915	41.36	12.93	14.85	14.18	42.0
47.	1.2986	.4107	42.02	13.89	17.20	15.72	43.0
47.	1.3032	.4301	42.32	16.02	19.78	17.33	44.0
47.	1.2956	.4473	43.22	18.88	22.93	19.17	45.0
47.	1.2821	.4527	43.85	23.87	25.93	21.22	46.0
47.	1.2473	.4500	45.80	31.31	29.17	22.69	47.0
47.	1.2171	.4420	46.47	39.55	32.47	23.40	48.0
47.	1.1851	.4324	47.55	46.86	35.56	23.23	49.0
47.	1.1385	.4261	48.67	50.70	38.73	22.64	50.0
47.	1.0912	.4215	49.55	53.25	42.24	22.71	51.0
47.	1.0361	.4129	50.10	61.39	45.86	22.58	52.0
47.	.9827	.4052	51.89	62.54	49.39	22.96	53.0

QRS WAVE FOR FEMALE AGE 35 FRANK LEAD SYSTEM (cont.)

47.	.9272	.3868	54.81	65.11	53.04	23.56	54.0
47.	.8730	.3648	58.26	66.53	56.81	24.51	55.0
47.	.8246	.3444	61.87	68.77	61.13	25.72	56.0
47.	.7748	.3191	66.00	73.52	65.02	26.91	57.0
47.	.7258	.3081	70.63	80.30	68.27	27.43	58.0
47.	.6815	.2918	75.26	80.26	71.79	27.79	59.0
47.	.6291	.2683	81.83	84.21	75.14	27.94	60.0
47.	.5855	.2504	97.90	82.46	78.14	27.76	61.0
47.	.5429	.2421	117.99	76.98	79.32	27.22	62.0
47.	.5017	.2335	133.23	76.64	79.42	26.41	63.0
47.	.4678	.2193	145.65	77.09	79.99	26.84	64.0
47.	.4360	.2113	158.07	76.73	78.66	25.78	65.0
47.	.4006	.2010	168.28	76.67	79.18	25.96	66.0
47.	.3686	.1929	-179.45	76.05	78.37	25.90	67.0
47.	.3378	.1842	-177.19	72.17	76.48	24.47	68.0
47.	.3113	.1736	-171.53	70.40	75.36	24.29	69.0
47.	.2852	.1645	-165.08	74.83	73.80	25.32	70.0
47.	.2595	.1553	-158.26	72.69	71.13	27.78	71.0
46.	.2441	.1451	-158.04	71.70	68.67	29.59	72.0
46.	.2259	.1361	-155.77	76.76	68.07	31.41	73.0
45.	.2085	.1269	-146.92	81.95	67.87	32.54	74.0
43.	.1967	.1165	-151.91	70.91	65.21	32.80	75.0
42.	.1850	.1093	-143.15	78.58	68.63	35.48	76.0
41.	.1694	.1060	-147.81	72.16	64.60	31.76	77.0
39.	.1629	.0995	-149.19	70.74	61.63	33.61	78.0
37.	.1518	.0979	-149.75	73.61	59.70	36.61	79.0
35.	.1426	.0876	-163.44	71.01	60.15	37.18	80.0
35.	.1295	.0857	-166.82	73.36	59.96	39.59	81.0
33.	.1214	.0830	-162.33	77.72	55.30	36.67	82.0
33.	.1084	.0765	-156.43	74.88	55.89	35.41	83.0
32.	.1047	.0735	-170.31	73.14	50.31	39.85	84.0
28.	.1036	.0699	-146.62	81.77	41.31	36.98	85.0
25.	.0989	.0628	-131.21	86.49	43.02	42.03	86.0
24.	.0975	.0543	-145.78	84.30	40.06	40.15	87.0
22.	.0925	.0536	-135.88	86.11	31.48	37.29	88.0
19.	.0842	.0523	-147.55	79.97	29.90	30.40	89.0
16.	.0785	.0537	-162.75	78.55	31.11	32.31	90.0
15.	.0790	.0452	-139.51	77.07	12.87	24.63	91.0
11.	.0822	.0471	-118.78	58.81	9.53	32.57	92.0
9.	.0882	.0462	-138.19	69.29	8.01	27.10	93.0
8.	.0815	.0390	-121.45	74.44	12.50	19.26	94.0
8.	.0784	.0353	-131.44	75.00	3.55	25.18	95.0
8.	.0757	.0370	-122.74	58.83	5.20	38.18	96.0
6.	.0766	.0361	-142.81	66.05	4.20	22.06	97.0
5.	.0709	.0489	-124.01	39.87	4.81	21.71	98.0
5.	.0806	.0432	-118.59	45.66	3.50	18.95	99.0
5.	.0660	.0307	-111.18	33.03	3.07	23.36	100.0
5.	.0734	.0302	-106.31	36.89	4.12	22.30	101.0
3.	.0774	.0177	-84.61	19.96	-9.34	19.06	102.0
3.	.0500	.0216	-76.14	10.14	-12.15	19.88	103.0
3.	.0424	.0260	-91.90	36.58	-33.58	6.95	104.0
3.	.0428	.0196	-78.95	42.33	-27.26	43.83	105.0
3.	.0382	.0227	-76.63	64.79	-42.39	34.51	106.0

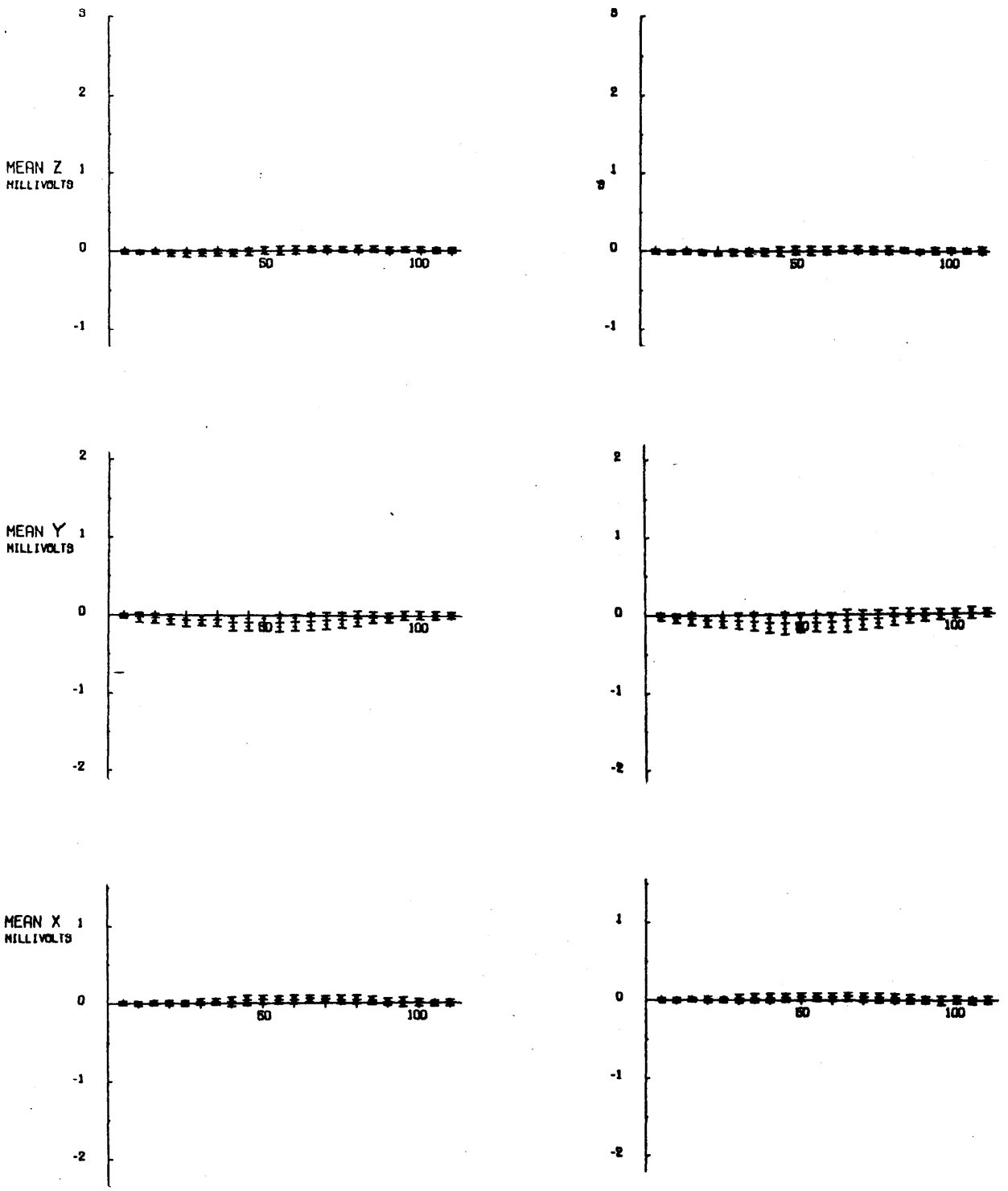
T WAVE FOR FEMALE AGE 35 FRANK LEAD SYSTEM
AVERAGE AGE IS 35.4

N	SMAG	SDSM	ALPHA	SDA	TILT	SDT	TIME
47.	.0728	.0317	-147.49	70.17	-19.77	27.32	1.0
47.	.0637	.0268	-150.63	66.26	-40.25	28.60	2.0
47.	.0640	.0350	-135.00	72.22	-38.46	31.67	3.0
47.	.0681	.0328	-136.15	70.36	-45.69	30.38	4.0
47.	.0694	.0319	-143.15	65.55	-53.09	34.00	5.0
47.	.0674	.0376	-134.94	75.39	-59.01	33.15	6.0
47.	.0701	.0335	-129.92	78.04	-58.00	31.72	7.0
47.	.0654	.0263	-144.62	72.34	-60.89	33.09	8.0
47.	.0657	.0292	-133.93	84.11	-67.13	33.82	9.0
47.	.0661	.0283	-133.88	83.03	-65.10	33.22	10.0
47.	.0658	.0281	-145.53	88.24	-71.48	35.85	11.0
47.	.0686	.0305	-126.03	95.34	-76.51	36.05	12.0
47.	.0696	.0269	-114.40	101.29	-79.21	41.30	13.0
47.	.0678	.0307	-100.25	105.07	-81.78	42.42	14.0
47.	.0715	.0394	-57.91	98.47	-77.39	39.24	15.0
47.	.0746	.0323	21.77	95.71	-89.19	47.05	16.0
47.	.0723	.0311	4.60	88.55	-79.18	41.62	17.0
47.	.0732	.0314	15.67	83.95	-77.19	40.85	18.0
47.	.0793	.0384	23.83	85.43	-77.15	39.87	19.0
47.	.0823	.0321	11.78	76.37	-69.19	37.03	20.0
47.	.0775	.0337	16.57	73.43	-64.61	32.85	21.0
47.	.0864	.0414	34.09	70.63	-61.17	31.41	22.0
47.	.0888	.0351	22.15	70.10	-64.22	30.47	23.0
47.	.0891	.0365	25.58	64.96	-55.77	27.19	24.0
47.	.0968	.0397	35.02	62.85	-57.74	23.95	25.0
47.	.1057	.0388	37.06	59.49	-53.03	22.36	26.0
47.	.1132	.0437	31.78	58.46	-52.58	21.44	27.0
47.	.1185	.0470	27.56	48.90	-45.78	20.60	28.0
47.	.1323	.0547	30.53	44.90	-43.54	20.77	29.0
47.	.1478	.0564	30.28	43.09	-41.32	19.25	30.0
47.	.1600	.0626	31.85	43.85	-38.79	17.26	31.0
47.	.1742	.0693	29.01	37.60	-36.01	17.24	32.0
47.	.1935	.0767	30.62	33.19	-32.66	17.66	33.0
47.	.2118	.0867	32.09	29.15	-32.50	17.21	34.0
47.	.2280	.0917	31.47	26.90	-29.26	14.75	35.0
47.	.2505	.0957	32.72	25.96	-26.33	16.34	36.0
47.	.2733	.1033	33.28	21.82	-25.60	15.01	37.0
47.	.2872	.1040	34.92	19.75	-23.61	13.48	38.0
47.	.3076	.1073	34.56	18.17	-21.10	14.41	39.0
47.	.3258	.1070	36.22	16.10	-20.20	14.61	40.0
47.	.3414	.1099	38.41	17.03	-19.70	13.25	41.0
47.	.3499	.1132	38.45	14.71	-18.65	12.37	42.0
47.	.3566	.1138	38.12	14.31	-16.84	12.17	43.0
47.	.3642	.1098	39.75	14.35	-16.52	10.90	44.0
47.	.3609	.1106	39.41	13.55	-16.74	11.01	45.0
47.	.3557	.1060	41.04	13.63	-15.65	11.14	46.0
47.	.3407	.1024	42.82	14.97	-15.64	10.04	47.0
47.	.3166	.0991	43.37	15.59	-16.64	10.68	48.0
47.	.2916	.0910	46.24	14.28	-16.63	11.67	49.0
47.	.2582	.0815	47.44	16.07	-18.18	10.58	50.0
47.	.2303	.0747	49.09	18.49	-19.69	11.85	51.0
47.	.1967	.0648	52.12	20.54	-20.27	13.66	52.0
47.	.1674	.0561	54.15	24.14	-22.29	14.66	53.0
47.	.1358	.0504	59.14	25.72	-23.56	16.37	54.0
47.	.1155	.0445	62.04	36.67	-26.80	18.39	55.0
47.	.0989	.0396	64.97	38.07	-27.41	23.41	56.0
47.	.0820	.0359	68.94	53.83	-34.38	21.79	57.0
47.	.0729	.0334	84.19	62.91	-38.95	25.54	58.0
47.	.0682	.0315	87.23	72.56	-41.98	28.02	59.0
47.	.0600	.0265	99.41	80.03	-40.78	36.11	60.0

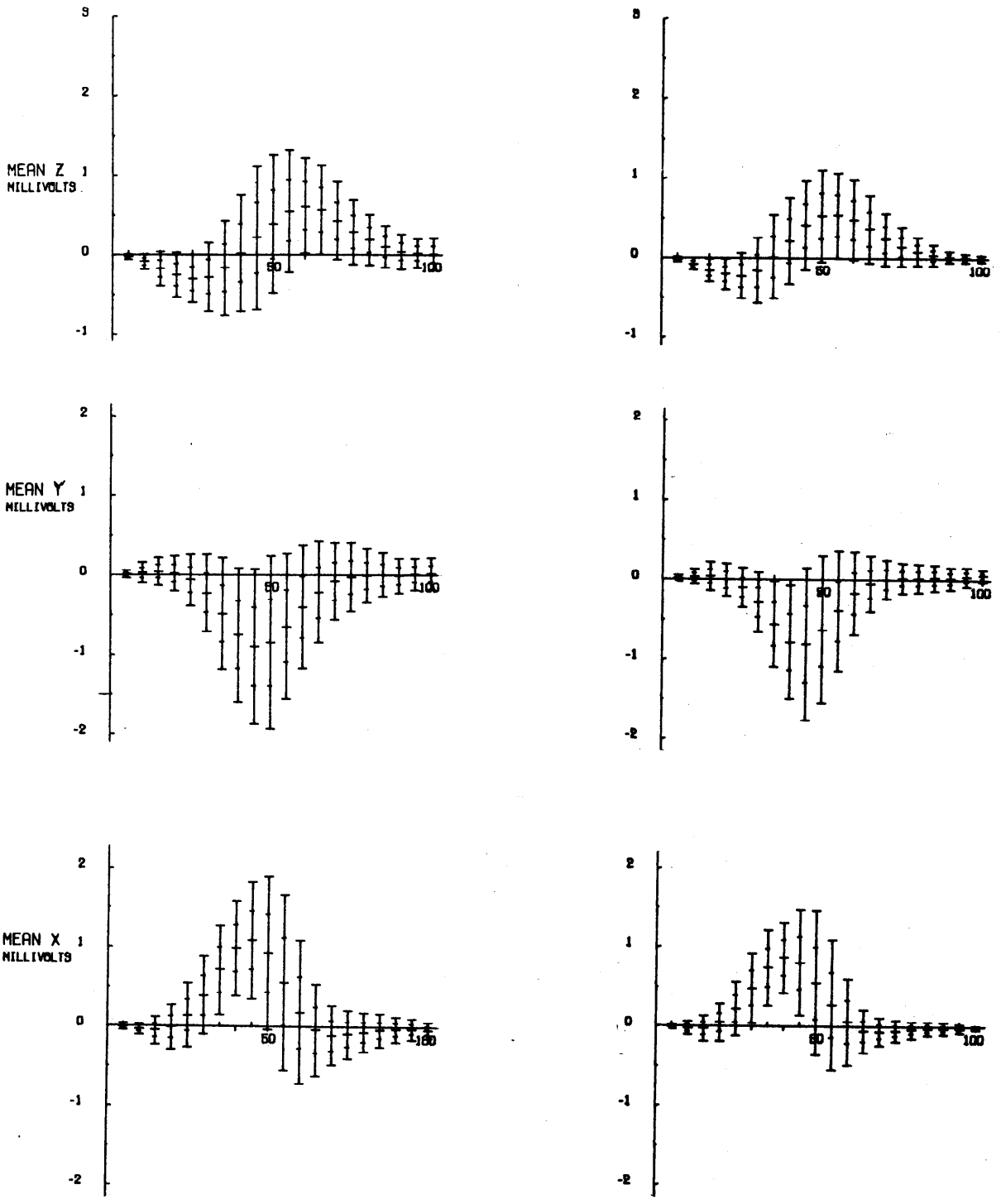
Appendix VI

Plots and Detailed Tables* for Age 35 for the Frank Lead System in Rectangular Coordinates.

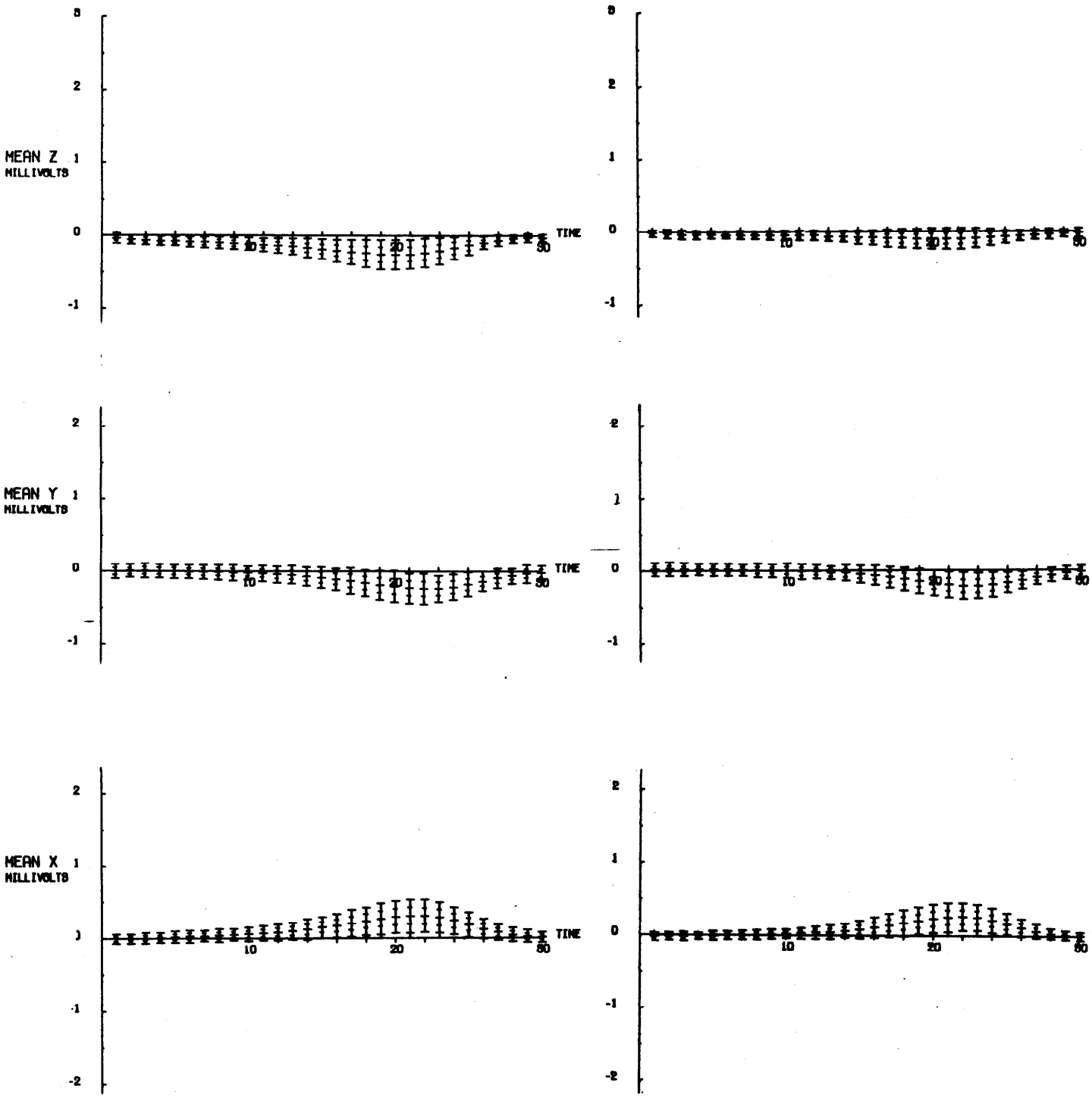
*Tabular values are good to two places to the right of the decimal. See text Section 5.



P WAVE
AGE 35 FRANK LEAD SYSTEM



QRS WAVE
AGE 35 FRANK LEAD SYSTEM



T WAVE
AGE 35 FRANK LEAD SYSTEM

P WAVE FOR MALE AGE 35 FRANK LEAD SYSTEM
AVERAGE AGE IS 35.3

N	XBAR	SDX	YBAR	SDY	ZBAR	SDZ	TIME
56.	.0024	.0129	-.0025	.0179	-.0005	.0125	1.0
56.	.0038	.0123	.0012	.0124	-.0005	.0124	2.0
56.	-.0011	.0155	-.0059	.0184	-.0050	.0137	3.0
56.	.0001	.0169	-.0080	.0200	-.0054	.0136	4.0
56.	.0023	.0126	-.0163	.0189	-.0127	.0139	5.0
56.	-.0041	.0167	-.0218	.0224	-.0136	.0112	6.0
56.	-.0011	.0171	-.0263	.0245	-.0118	.0150	7.0
56.	-.0018	.0152	-.0274	.0287	-.0122	.0151	8.0
56.	-.0011	.0133	-.0317	.0300	-.0125	.0162	9.0
56.	.0006	.0154	-.0316	.0318	-.0155	.0125	10.0
56.	.0013	.0131	-.0336	.0294	-.0124	.0179	11.0
56.	.0036	.0137	-.0344	.0315	-.0130	.0162	12.0
56.	.0083	.0187	-.0372	.0373	-.0139	.0142	13.0
56.	.0096	.0133	-.0400	.0331	-.0103	.0159	14.0
56.	.0077	.0142	-.0431	.0334	-.0137	.0157	15.0
56.	.0115	.0143	-.0440	.0348	-.0174	.0179	16.0
56.	.0097	.0154	-.0489	.0375	-.0185	.0151	17.0
56.	.0101	.0164	-.0521	.0363	-.0176	.0177	18.0
56.	.0087	.0162	-.0529	.0328	-.0197	.0194	19.0
56.	.0077	.0166	-.0590	.0353	-.0265	.0202	20.0
56.	.0075	.0163	-.0634	.0359	-.0271	.0206	21.0
56.	.0068	.0180	-.0651	.0353	-.0271	.0218	22.0
56.	.0039	.0187	-.0689	.0372	-.0307	.0208	23.0
56.	.0087	.0186	-.0734	.0370	-.0321	.0208	24.0
56.	.0084	.0167	-.0745	.0377	-.0329	.0231	25.0
56.	.0102	.0193	-.0742	.0361	-.0292	.0244	26.0
56.	.0113	.0188	-.0679	.0356	-.0289	.0220	27.0
56.	.0133	.0202	-.0696	.0404	-.0274	.0237	28.0
56.	.0182	.0197	-.0659	.0403	-.0285	.0196	29.0
56.	.0192	.0183	-.0702	.0373	-.0271	.0219	30.0
56.	.0176	.0196	-.0701	.0400	-.0291	.0227	31.0
56.	.0184	.0193	-.0724	.0410	-.0268	.0241	32.0
56.	.0204	.0169	-.0716	.0356	-.0262	.0222	33.0
56.	.0224	.0210	-.0705	.0359	-.0261	.0200	34.0
56.	.0193	.0179	-.0749	.0372	-.0263	.0213	35.0
56.	.0230	.0244	-.0818	.0420	-.0283	.0209	36.0
56.	.0217	.0246	-.0816	.0418	-.0289	.0231	37.0
56.	.0214	.0262	-.0913	.0430	-.0320	.0244	38.0
56.	.0221	.0271	-.0941	.0500	-.0284	.0246	39.0
56.	.0206	.0280	-.1014	.0480	-.0273	.0228	40.0
56.	.0221	.0299	-.0994	.0470	-.0246	.0230	41.0
56.	.0287	.0299	-.1053	.0477	-.0245	.0233	42.0
56.	.0291	.0290	-.1009	.0494	-.0221	.0247	43.0
56.	.0344	.0305	-.0973	.0516	-.0173	.0243	44.0
56.	.0379	.0319	-.0989	.0499	-.0147	.0241	45.0
56.	.0391	.0294	-.0995	.0510	-.0123	.0275	46.0
56.	.0415	.0273	-.0974	.0497	-.0036	.0220	47.0
56.	.0451	.0284	-.0992	.0485	-.0044	.0235	48.0
56.	.0471	.0272	-.0947	.0503	.0003	.0228	49.0
56.	.0453	.0290	-.0979	.0503	.0034	.0218	50.0
56.	.0422	.0285	-.0952	.0513	.0029	.0248	51.0
56.	.0480	.0286	-.0949	.0494	.0018	.0232	52.0
56.	.0450	.0291	-.0930	.0527	.0026	.0271	53.0
56.	.0446	.0281	-.0965	.0543	.0021	.0255	54.0

P WAVE FOR MALE AGE 35 FRANK LEAD SYSTEM (cont.)

56.	.0397	.0262	-.0973	.0543	.0024	.0268	55.0
56.	.0434	.0288	-.0996	.0546	-.0015	.0240	56.0
56.	.0458	.0309	-.0956	.0505	.0019	.0254	57.0
56.	.0438	.0285	-.0964	.0501	.0038	.0250	58.0
56.	.0450	.0233	-.0941	.0513	.0073	.0248	59.0
56.	.0443	.0254	-.0932	.0532	.0104	.0244	60.0
56.	.0496	.0273	-.0873	.0536	.0125	.0238	61.0
56.	.0510	.0255	-.0832	.0516	.0134	.0247	62.0
56.	.0525	.0249	-.0806	.0523	.0168	.0240	63.0
56.	.0523	.0232	-.0790	.0544	.0190	.0224	64.0
56.	.0553	.0222	-.0758	.0553	.0203	.0200	65.0
56.	.0535	.0213	-.0778	.0564	.0169	.0211	66.0
56.	.0561	.0224	-.0723	.0536	.0176	.0199	67.0
56.	.0536	.0217	-.0709	.0535	.0176	.0206	68.0
56.	.0528	.0212	-.0685	.0540	.0162	.0204	69.0
56.	.0516	.0202	-.0685	.0554	.0153	.0201	70.0
56.	.0482	.0191	-.0651	.0488	.0122	.0216	71.0
56.	.0469	.0211	-.0668	.0532	.0113	.0235	72.0
56.	.0449	.0282	-.0649	.0501	.0124	.0245	73.0
56.	.0443	.0207	-.0632	.0492	.0119	.0230	74.0
56.	.0446	.0255	-.0572	.0492	.0138	.0191	75.0
56.	.0417	.0254	-.0576	.0490	.0143	.0218	76.0
56.	.0464	.0252	-.0487	.0482	.0149	.0207	77.0
56.	.0440	.0259	-.0456	.0487	.0195	.0223	78.0
56.	.0433	.0245	-.0410	.0439	.0190	.0228	79.0
56.	.0432	.0283	-.0399	.0489	.0216	.0231	80.0
56.	.0432	.0281	-.0342	.0410	.0222	.0225	81.0
56.	.0386	.0246	-.0328	.0383	.0195	.0205	82.0
56.	.0346	.0266	-.0334	.0415	.0211	.0224	83.0
56.	.0354	.0272	-.0335	.0375	.0177	.0191	84.0
56.	.0279	.0253	-.0285	.0378	.0174	.0188	85.0
56.	.0272	.0257	-.0269	.0428	.0140	.0188	86.0
55.	.0249	.0241	-.0244	.0397	.0106	.0202	87.0
54.	.0223	.0190	-.0239	.0355	.0113	.0212	88.0
54.	.0176	.0228	-.0236	.0361	.0088	.0221	89.0
54.	.0128	.0226	-.0257	.0338	.0074	.0201	90.0
54.	.0121	.0218	-.0199	.0394	.0059	.0197	91.0
53.	.0143	.0256	-.0179	.0359	.0064	.0213	92.0
52.	.0153	.0229	-.0150	.0329	.0108	.0177	93.0
52.	.0102	.0229	-.0087	.0336	.0128	.0162	94.0
52.	.0129	.0291	-.0030	.0300	.0126	.0177	95.0
52.	.0121	.0271	-.0000	.0291	.0123	.0202	96.0
47.	.0125	.0223	-.0021	.0274	.0133	.0182	97.0
44.	.0147	.0233	.0037	.0301	.0170	.0172	98.0
42.	.0107	.0225	-.0007	.0283	.0166	.0202	99.0
41.	.0066	.0210	.0027	.0263	.0144	.0176	100.0
38.	.0043	.0189	.0064	.0315	.0136	.0165	101.0
38.	.0030	.0212	.0084	.0271	.0116	.0135	102.0
37.	.0017	.0186	.0057	.0249	.0091	.0193	103.0
36.	-.0040	.0198	.0087	.0283	.0066	.0159	104.0
35.	-.0052	.0167	.0068	.0289	.0051	.0157	105.0
34.	-.0061	.0166	.0047	.0242	.0045	.0156	106.0
32.	-.0086	.0172	.0076	.0227	.0091	.0165	107.0
29.	-.0038	.0185	.0116	.0293	.0032	.0213	108.0
28.	-.0036	.0205	.0102	.0244	.0055	.0163	109.0
23.	-.0020	.0208	.0071	.0217	.0071	.0176	110.0
17.	-.0061	.0191	.0083	.0193	.0091	.0220	111.0
15.	-.0064	.0166	.0069	.0216	.0140	.0200	112.0
14.	-.0077	.0245	.0107	.0234	.0109	.0253	113.0
12.	.0019	.0211	.0201	.0228	.0200	.0218	114.0
12.	-.0042	.0242	.0232	.0268	.0157	.0222	115.0
11.	-.0007	.0230	.0182	.0186	.0044	.0200	116.0
10.	.0053	.0231	.0229	.0232	.0066	.0205	117.0
8.	-.0048	.0230	.0223	.0153	.0112	.0145	118.0
8.	-.0040	.0258	.0260	.0119	.0184	.0191	119.0
8.	-.0139	.0195	.0265	.0109	.0159	.0238	120.0
7.	-.0094	.0167	.0207	.0233	.0063	.0196	121.0
7.	-.0131	.0148	.0233	.0177	.0000	.0234	122.0
7.	-.0113	.0099	.0206	.0125	.0012	.0174	123.0
6.	-.0157	.0064	.0326	.0220	.0091	.0176	124.0
6.	-.0114	.0124	.0329	.0253	.0111	.0204	125.0

QRS WAVE FOR MALE AGE 35 FRANK LEAD SYSTEM
AVERAGE AGE IS 35.3

N	XBAR	SDX	YBAR	SDY	ZBAR	SDZ	TIME
56.	.0011	.0145	.0023	.0201	-.0023	.0132	1.0
56.	.0015	.0128	.0031	.0194	-.0032	.0127	2.0
56.	-.0005	.0152	.0042	.0210	-.0064	.0144	3.0
56.	-.0050	.0192	.0084	.0206	-.0119	.0150	4.0
56.	-.0059	.0215	.0100	.0250	-.0211	.0179	5.0
56.	-.0140	.0185	.0088	.0327	-.0298	.0221	6.0
56.	-.0200	.0229	.0098	.0387	-.0410	.0263	7.0
56.	-.0243	.0299	.0157	.0469	-.0527	.0340	8.0
56.	-.0333	.0332	.0169	.0532	-.0663	.0400	9.0
56.	-.0372	.0359	.0283	.0635	-.0836	.0471	10.0
56.	-.0417	.0421	.0338	.0642	-.0995	.0591	11.0
56.	-.0448	.0549	.0420	.0704	-.1191	.0702	12.0
56.	-.0478	.0613	.0432	.0823	-.1377	.0845	13.0
56.	-.0518	.0754	.0464	.0834	-.1558	.0979	14.0
56.	-.0538	.0865	.0448	.0884	-.1728	.1078	15.0
56.	-.0493	.0939	.0394	.0939	-.1897	.1179	16.0
56.	-.0446	.1093	.0346	.0968	-.2091	.1266	17.0
56.	-.0379	.1187	.0352	.1041	-.2279	.1336	18.0
56.	-.0225	.1289	.0253	.1027	-.2391	.1377	19.0
56.	-.0078	.1398	.0201	.1102	-.2515	.1391	20.0
56.	.0126	.1568	.0047	.1136	-.2667	.1448	21.0
56.	.0415	.1719	-.0044	.1216	-.2773	.1453	22.0
56.	.0683	.1790	-.0218	.1360	-.2844	.1416	23.0
56.	.1022	.1921	-.0393	.1484	-.2930	.1437	24.0
56.	.1413	.2020	-.0635	.1610	-.2986	.1500	25.0
56.	.1829	.2125	-.0894	.1796	-.2991	.1602	26.0
56.	.2338	.2252	-.1200	.1974	-.2991	.1686	27.0
56.	.2863	.2339	-.1490	.2134	-.2983	.1822	28.0
56.	.3378	.2389	-.1905	.2283	-.2903	.2001	29.0
56.	.3927	.2481	-.2254	.2432	-.2783	.2152	30.0
56.	.4557	.2598	-.2709	.2611	-.2643	.2291	31.0
56.	.5200	.2620	-.3184	.2827	-.2447	.2518	32.0
56.	.5877	.2686	-.3734	.3040	-.2228	.2716	33.0
56.	.6508	.2740	-.4293	.3278	-.1956	.2864	34.0
56.	.7153	.2810	-.4869	.3521	-.1630	.2979	35.0
56.	.7764	.2893	-.5461	.3671	-.1283	.3135	36.0
56.	.8361	.2950	-.6001	.3736	-.0948	.3241	37.0
56.	.8941	.2942	-.6506	.3867	-.0548	.3387	38.0
56.	.9476	.2987	-.7018	.4071	-.0128	.3519	39.0
56.	.9904	.3022	-.7521	.4232	.0249	.3671	40.0
56.	1.0311	.3073	-.7919	.4447	.0651	.3869	41.0
56.	1.0597	.3205	-.8314	.4607	.1032	.4068	42.0
56.	1.0763	.3351	-.8583	.4751	.1398	.4269	43.0
56.	1.0947	.3521	-.8807	.4848	.1812	.4478	44.0
56.	1.0908	.3716	-.8968	.4898	.2164	.4514	45.0
56.	1.0846	.3916	-.9070	.4981	.2479	.4481	46.0
56.	1.0672	.4211	-.9121	.5159	.2838	.4446	47.0
56.	1.0336	.4406	-.9042	.5314	.3192	.4367	48.0
56.	.9837	.4691	-.8864	.5415	.3563	.4381	49.0
56.	.9293	.4867	-.8503	.5435	.3887	.4351	50.0
56.	.8705	.5144	-.8173	.5396	.4291	.4285	51.0
56.	.7977	.5334	-.7844	.5268	.4667	.4211	52.0
56.	.7247	.5466	-.7406	.5060	.5032	.4080	53.0
56.	.6447	.5587	-.6954	.4862	.5302	.3938	54.0

QRS WAVE FOR MALE AGE 35 FRANK LEAD SYSTEM

56.	.5632	.5554	-.6460	.4588	.5527	.3848	55.0
56.	.4786	.5430	-.5986	.4451	.5734	.3694	56.0
56.	.3954	.5257	-.5531	.4330	.5922	.3498	57.0
56.	.3170	.4989	-.4964	.4094	.6049	.3325	58.0
56.	.2439	.4756	-.4546	.3981	.6174	.3200	59.0
56.	.1814	.4519	-.4056	.3858	.6199	.3023	60.0
56.	.1250	.4222	-.3649	.3770	.6164	.2936	61.0
56.	.0750	.3966	-.3245	.3560	.6105	.2823	62.0
56.	.0290	.3656	-.2917	.3496	.5998	.2844	63.0
56.	-.0059	.3261	-.2539	.3355	.5817	.2820	64.0
56.	-.0407	.2916	-.2185	.3177	.5677	.2814	65.0
56.	-.0654	.2612	-.1843	.3001	.5443	.2762	66.0
56.	-.0846	.2332	-.1557	.2797	.5222	.2716	67.0
56.	-.0944	.2168	-.1249	.2693	.4954	.2605	68.0
56.	-.0983	.2020	-.0997	.2557	.4638	.2542	69.0
56.	-.1068	.1886	-.0840	.2404	.4300	.2425	70.0
56.	-.1088	.1790	-.0651	.2407	.4008	.2297	71.0
56.	-.1067	.1708	-.0489	.2315	.3704	.2226	72.0
56.	-.1064	.1647	-.0401	.2235	.3410	.2200	73.0
56.	-.1015	.1578	-.0355	.2155	.3126	.2187	74.0
56.	-.0935	.1529	-.0292	.2135	.2895	.2059	75.0
56.	-.0920	.1417	-.0205	.2067	.2618	.1943	76.0
55.	-.0856	.1368	-.0179	.1954	.2376	.1833	77.0
54.	-.0765	.1334	-.0127	.1848	.2227	.1739	78.0
53.	-.0716	.1275	-.0087	.1772	.2053	.1642	79.0
53.	-.0665	.1223	-.0110	.1684	.1865	.1600	80.0
51.	-.0624	.1187	-.0060	.1640	.1756	.1528	81.0
51.	-.0553	.1166	-.0013	.1577	.1588	.1495	82.0
51.	-.0496	.1150	.0031	.1488	.1401	.1438	83.0
51.	-.0451	.1078	.0017	.1472	.1201	.1361	84.0
51.	-.0400	.1047	.0010	.1374	.1044	.1335	85.0
51.	-.0355	.1014	-.0015	.1284	.0900	.1274	86.0
51.	-.0343	.0920	-.0015	.1203	.0745	.1238	87.0
51.	-.0286	.0894	-.0052	.1184	.0598	.1187	88.0
47.	-.0325	.0877	-.0025	.1129	.0515	.1155	89.0
45.	-.0299	.0806	-.0096	.1092	.0400	.1105	90.0
41.	-.0307	.0795	-.0053	.1066	.0365	.1074	91.0
37.	-.0327	.0769	-.0064	.1054	.0360	.0969	92.0
36.	-.0292	.0678	.0017	.1001	.0306	.0925	93.0
30.	-.0307	.0700	.0098	.1041	.0300	.0923	94.0
29.	-.0259	.0664	.0133	.0995	.0209	.0902	95.0
29.	-.0214	.0585	.0090	.0883	.0123	.0828	96.0
24.	-.0186	.0633	.0188	.0962	.0093	.0829	97.0
19.	-.0262	.0590	.0098	.1000	.0078	.0860	98.0
14.	-.0445	.0514	.0304	.0930	.0109	.0976	99.0
13.	-.0415	.0495	.0210	.0998	.0080	.0990	100.0
11.	-.0421	.0529	.0481	.0783	-.0022	.0991	101.0
8.	-.0342	.0428	.0667	.0713	.0138	.0950	102.0
8.	-.0387	.0423	.0591	.0737	.0101	.0941	103.0
8.	-.0368	.0388	.0517	.0768	.0026	.0900	104.0
7.	-.0345	.0485	.0512	.0666	-.0158	.0788	105.0
7.	-.0323	.0393	.0387	.0713	-.0173	.0777	106.0
7.	-.0277	.0399	.0353	.0596	-.0260	.0733	107.0
5.	-.0278	.0452	.0305	.0690	-.0094	.0703	108.0
5.	-.0282	.0383	.0243	.0660	-.0061	.0594	109.0
3.	-.0313	.0331	.0613	.0360	.0016	.0641	110.0
3.	-.0299	.0332	.0394	.0359	-.0064	.0523	111.0
3.	-.0346	.0379	.0176	.0255	-.0166	.0568	112.0
3.	-.0211	.0279	.0134	.0352	-.0102	.0457	113.0
2.	-.0324	.0149	.0199	.0314	.0009	.0395	114.0
2.	-.0168	.0071	.0126	.0116	.0044	.0260	115.0

T WAVE FOR MALE AGE 35 FRANK LEAD SYSTEM
AVERAGE AGE IS 35.3

N	XBAR	SDX	YBAR	SDY	ZBAR	SDZ	TIME
56.	-.0072	.0358	.0022	.0573	-.0236	.0369	1.0
56.	-.0049	.0313	.0004	.0507	-.0400	.0336	2.0
56.	-.0021	.0325	.0010	.0437	-.0469	.0297	3.0
56.	-.0025	.0315	.0072	.0456	-.0566	.0298	4.0
56.	-.0006	.0358	-.0000	.0438	-.0654	.0299	5.0
56.	.0028	.0363	.0081	.0495	-.0658	.0318	6.0
56.	.0131	.0387	.0057	.0451	-.0699	.0335	7.0
56.	.0086	.0346	.0031	.0470	-.0778	.0319	8.0
56.	.0160	.0367	.0020	.0484	-.0823	.0342	9.0
56.	.0178	.0392	-.0006	.0475	-.0823	.0305	10.0
56.	.0219	.0365	.0000	.0448	-.0816	.0325	11.0
56.	.0263	.0425	-.0053	.0463	-.0882	.0350	12.0
56.	.0285	.0392	-.0045	.0493	-.0884	.0341	13.0
56.	.0317	.0367	-.0063	.0494	-.0905	.0372	14.0
56.	.0359	.0410	-.0105	.0457	-.0955	.0381	15.0
56.	.0387	.0439	-.0117	.0520	-.1010	.0384	16.0
56.	.0413	.0428	-.0139	.0498	-.1003	.0403	17.0
56.	.0503	.0404	-.0173	.0556	-.1066	.0407	18.0
56.	.0488	.0411	-.0215	.0525	-.1113	.0422	19.0
56.	.0554	.0471	-.0236	.0490	-.1182	.0422	20.0
56.	.0612	.0460	-.0228	.0534	-.1207	.0459	21.0
56.	.0698	.0499	-.0294	.0554	-.1259	.0446	22.0
56.	.0753	.0517	-.0342	.0597	-.1320	.0476	23.0
56.	.0826	.0559	-.0445	.0578	-.1403	.0480	24.0
56.	.0897	.0547	-.0460	.0617	-.1451	.0520	25.0
56.	.0998	.0575	-.0497	.0624	-.1506	.0547	26.0
56.	.1083	.0632	-.0591	.0609	-.1596	.0574	27.0
56.	.1195	.0681	-.0686	.0641	-.1704	.0632	28.0
56.	.1274	.0683	-.0820	.0684	-.1782	.0632	29.0
56.	.1468	.0713	-.0851	.0707	-.1862	.0670	30.0
56.	.1548	.0798	-.0968	.0761	-.1993	.0723	31.0
56.	.1703	.0802	-.1071	.0747	-.2067	.0748	32.0
56.	.1861	.0844	-.1177	.0820	-.2157	.0810	33.0
56.	.2018	.0930	-.1322	.0888	-.2272	.0819	34.0
56.	.2139	.0961	-.1473	.0905	-.2392	.0875	35.0
56.	.2334	.0953	-.1585	.0917	-.2433	.0921	36.0
56.	.2509	.1055	-.1724	.0983	-.2509	.0939	37.0
56.	.2635	.1083	-.1884	.1004	-.2587	.0983	38.0
56.	.2739	.1090	-.2004	.0970	-.2603	.0972	39.0
56.	.2890	.1114	-.2061	.1073	-.2601	.0987	40.0
56.	.2956	.1148	-.2228	.1074	-.2577	.0997	41.0
56.	.3012	.1153	-.2326	.1017	-.2563	.0986	42.0
56.	.3047	.1139	-.2377	.1056	-.2465	.1006	43.0
56.	.3011	.1130	-.2387	.1034	-.2365	.0974	44.0
56.	.2912	.1072	-.2387	.0984	-.2260	.0923	45.0
56.	.2798	.1058	-.2407	.0891	-.2119	.0894	46.0
56.	.2609	.1018	-.2280	.0907	-.1903	.0854	47.0
56.	.2370	.0923	-.2155	.0866	-.1704	.0756	48.0
56.	.2069	.0898	-.1995	.0793	-.1541	.0657	49.0
56.	.1833	.0847	-.1779	.0827	-.1316	.0650	50.0
56.	.1506	.0735	-.1525	.0793	-.1107	.0542	51.0
56.	.1218	.0671	-.1352	.0686	-.0966	.0412	52.0
56.	.1002	.0603	-.1133	.0643	-.0785	.0411	53.0
56.	.0773	.0530	-.0934	.0666	-.0659	.0380	54.0
56.	.0607	.0540	-.0756	.0621	-.0537	.0335	55.0
56.	.0432	.0464	-.0620	.0522	-.0444	.0266	56.0
56.	.0326	.0439	-.0507	.0540	-.0385	.0299	57.0
56.	.0238	.0411	-.0331	.0612	-.0312	.0281	58.0
56.	.0171	.0414	-.0285	.0569	-.0252	.0255	59.0
56.	.0126	.0361	-.0246	.0542	-.0271	.0245	60.0

P WAVE FOR FEMALE AGE 35 FRANK LEAD SYSTEM
AVERAGE AGE IS 35.3

N	XBAR	SDX	YBAR	SDY	ZBAR	SDZ	TIME
46.	.0029	.0112	.0009	.0103	.0021	.0103	1.0
46.	.0017	.0113	-.0085	.0192	-.0036	.0128	2.0
46.	.0015	.0139	-.0099	.0217	-.0069	.0147	3.0
46.	.0030	.0149	-.0142	.0212	-.0087	.0110	4.0
46.	.0010	.0142	-.0224	.0246	-.0124	.0143	5.0
46.	-.0027	.0147	-.0248	.0215	-.0148	.0129	6.0
46.	-.0009	.0107	-.0280	.0301	-.0176	.0141	7.0
46.	.0016	.0167	-.0298	.0299	-.0178	.0171	8.0
46.	-.0010	.0141	-.0348	.0352	-.0173	.0192	9.0
46.	.0003	.0143	-.0389	.0299	-.0149	.0134	10.0
46.	.0035	.0141	-.0408	.0337	-.0146	.0172	11.0
46.	.0039	.0149	-.0421	.0381	-.0152	.0202	12.0
46.	.0110	.0156	-.0434	.0367	-.0171	.0146	13.0
46.	.0099	.0150	-.0475	.0410	-.0130	.0151	14.0
46.	.0107	.0131	-.0485	.0398	-.0113	.0155	15.0
46.	.0101	.0139	-.0496	.0353	-.0140	.0128	16.0
46.	.0124	.0153	-.0509	.0310	-.0155	.0161	17.0
46.	.0096	.0155	-.0612	.0395	-.0170	.0148	18.0
46.	.0095	.0173	-.0686	.0376	-.0205	.0143	19.0
46.	.0075	.0192	-.0724	.0368	-.0204	.0141	20.0
46.	.0055	.0202	-.0695	.0382	-.0220	.0152	21.0
46.	.0108	.0220	-.0685	.0418	-.0246	.0164	22.0
46.	.0072	.0207	-.0762	.0435	-.0290	.0165	23.0
46.	.0082	.0205	-.0806	.0438	-.0287	.0165	24.0
46.	.0074	.0185	-.0802	.0414	-.0278	.0156	25.0
46.	.0121	.0209	-.0832	.0431	-.0294	.0148	26.0
46.	.0133	.0184	-.0808	.0469	-.0252	.0180	27.0
46.	.0101	.0206	-.0823	.0487	-.0258	.0170	28.0
46.	.0176	.0209	-.0795	.0530	-.0244	.0186	29.0
46.	.0189	.0246	-.0771	.0523	-.0230	.0193	30.0
46.	.0189	.0219	-.0780	.0553	-.0216	.0185	31.0
46.	.0237	.0225	-.0771	.0559	-.0190	.0180	32.0
46.	.0231	.0250	-.0766	.0554	-.0186	.0174	33.0
46.	.0257	.0219	-.0751	.0544	-.0161	.0184	34.0
46.	.0241	.0276	-.0852	.0574	-.0180	.0215	35.0
46.	.0231	.0251	-.0942	.0552	-.0214	.0228	36.0
46.	.0242	.0268	-.0963	.0550	-.0188	.0218	37.0
46.	.0230	.0294	-.1010	.0596	-.0196	.0223	38.0
46.	.0247	.0283	-.1036	.0542	-.0183	.0245	39.0
46.	.0236	.0271	-.1073	.0595	-.0172	.0225	40.0
46.	.0227	.0254	-.1130	.0661	-.0151	.0252	41.0
46.	.0261	.0282	-.1095	.0669	-.0124	.0261	42.0
46.	.0277	.0257	-.1104	.0679	-.0105	.0256	43.0
46.	.0278	.0260	-.1108	.0651	-.0053	.0272	44.0
46.	.0306	.0245	-.1106	.0708	-.0039	.0256	45.0
46.	.0368	.0282	-.1118	.0672	.0039	.0236	46.0
46.	.0333	.0265	-.1104	.0678	.0063	.0269	47.0
46.	.0402	.0279	-.1060	.0666	.0057	.0224	48.0
46.	.0399	.0230	-.1064	.0666	.0105	.0274	49.0
46.	.0360	.0252	-.1054	.0642	.0108	.0245	50.0
46.	.0389	.0261	-.1072	.0640	.0133	.0236	51.0
46.	.0399	.0233	-.1073	.0646	.0143	.0242	52.0
46.	.0365	.0264	-.1083	.0652	.0094	.0265	53.0
46.	.0378	.0249	-.1110	.0606	.0070	.0253	54.0

P WAVE FOR FEMALE AGE 35 FRANK LEAD SYSTEM (cont.)

46.	.0371	.0249	-.1057	.0590	.0073	.0268	55.0
46.	.0365	.0233	-.1091	.0656	.0083	.0257	56.0
46.	.0370	.0261	-.1067	.0603	.0078	.0258	57.0
46.	.0364	.0234	-.1084	.0675	.0090	.0254	58.0
46.	.0364	.0249	-.1077	.0688	.0042	.0287	59.0
46.	.0388	.0243	-.1021	.0630	.0077	.0240	60.0
46.	.0447	.0265	-.0999	.0663	.0115	.0316	61.0
46.	.0378	.0252	-.0966	.0672	.0114	.0247	62.0
46.	.0398	.0240	-.0924	.0661	.0108	.0270	63.0
46.	.0443	.0249	-.0863	.0705	.0139	.0230	64.0
46.	.0466	.0278	-.0840	.0716	.0127	.0228	65.0
46.	.0439	.0263	-.0835	.0681	.0141	.0219	66.0
46.	.0422	.0258	-.0797	.0705	.0178	.0213	67.0
46.	.0399	.0257	-.0805	.0665	.0138	.0242	68.0
46.	.0404	.0246	-.0742	.0643	.0101	.0198	69.0
46.	.0385	.0277	-.0732	.0632	.0132	.0209	70.0
46.	.0355	.0255	-.0739	.0627	.0094	.0198	71.0
46.	.0349	.0270	-.0695	.0624	.0095	.0219	72.0
46.	.0300	.0276	-.0705	.0601	.0071	.0256	73.0
46.	.0300	.0269	-.0634	.0619	.0088	.0224	74.0
46.	.0307	.0284	-.0637	.0587	.0059	.0227	75.0
46.	.0231	.0306	-.0611	.0577	.0076	.0224	76.0
44.	.0267	.0285	-.0564	.0583	.0078	.0219	77.0
44.	.0284	.0261	-.0529	.0609	.0074	.0260	78.0
44.	.0260	.0252	-.0439	.0531	.0053	.0238	79.0
44.	.0256	.0258	-.0434	.0548	.0095	.0245	80.0
44.	.0276	.0262	-.0385	.0500	.0129	.0258	81.0
44.	.0241	.0247	-.0341	.0462	.0107	.0204	82.0
44.	.0247	.0241	-.0310	.0481	.0113	.0226	83.0
44.	.0214	.0242	-.0227	.0468	.0095	.0205	84.0
43.	.0170	.0264	-.0251	.0462	.0083	.0164	85.0
43.	.0136	.0220	-.0218	.0480	.0063	.0171	86.0
43.	.0115	.0245	-.0202	.0459	.0055	.0159	87.0
40.	.0071	.0265	-.0159	.0445	.0031	.0164	88.0
39.	.0018	.0262	-.0161	.0371	-.0016	.0152	89.0
37.	.0024	.0204	-.0176	.0391	-.0054	.0146	90.0
37.	.0011	.0229	-.0149	.0374	-.0006	.0138	91.0
36.	-.0038	.0240	-.0157	.0410	-.0024	.0170	92.0
36.	-.0019	.0246	-.0132	.0433	.0002	.0217	93.0
33.	-.0022	.0233	-.0109	.0349	.0014	.0146	94.0
32.	-.0032	.0264	-.0107	.0357	.0012	.0185	95.0
30.	-.0013	.0251	-.0078	.0413	.0042	.0233	96.0
28.	.0016	.0267	.0039	.0368	.0069	.0195	97.0
24.	.0064	.0216	.0054	.0342	.0123	.0139	98.0
22.	.0054	.0264	.0046	.0341	.0094	.0157	99.0
20.	.0062	.0230	.0019	.0307	.0083	.0138	100.0
20.	-.0012	.0215	-.0031	.0291	.0053	.0145	101.0
20.	-.0031	.0263	-.0056	.0270	.0079	.0203	102.0
19.	-.0013	.0260	.0027	.0320	.0078	.0187	103.0
18.	-.0086	.0229	-.0021	.0332	-.0026	.0185	104.0
17.	-.0081	.0213	.0015	.0374	-.0007	.0145	105.0
16.	-.0038	.0186	.0028	.0325	.0010	.0138	106.0
14.	-.0099	.0229	.0028	.0359	-.0020	.0186	107.0
13.	-.0072	.0181	-.0022	.0300	-.0079	.0144	108.0
11.	-.0037	.0195	.0004	.0284	-.0075	.0125	109.0
9.	.0029	.0230	.0061	.0269	.0069	.0229	110.0
9.	-.0040	.0151	.0036	.0305	.0046	.0235	111.0
8.	.0048	.0216	.0111	.0300	.0132	.0223	112.0
6.	.0012	.0215	.0073	.0319	.0007	.0107	113.0
5.	.0126	.0268	.0095	.0150	.0049	.0142	114.0
4.	.0137	.0230	.0092	.0154	-.0001	.0199	115.0
4.	.0054	.0117	.0083	.0184	-.0016	.0157	116.0
3.	.0027	.0069	-.0074	.0193	-.0103	.0084	117.0
3.	.0078	.0158	-.0129	.0174	-.0071	.0172	118.0
2.	.0036	.0140	.0099	.0027	.0105	.0182	119.0
2.	-.0164	.0203	-.0070	.0117	-.0220	.0176	120.0
2.	-.0135	.0194	-.0149	.0058	-.0133	.0245	121.0
2.	-.0026	.0072	.0009	.0296	.0006	.0047	122.0
2.	-.0088	.0166	-.0170	.0118	-.0163	.0197	123.0
2.	.0101	.0055	.0247	.0394	.0030	.0035	124.0
2.	-.0118	.0079	.0208	.0235	-.0026	.0157	125.0

QRS WAVE FOR FEMALE AGE 35 FRANK LEAD SYSTEM
AVERAGE AGE IS 35.4

N	XBAR	SDX	YBAR	SDY	ZBAR	SDZ	TIME
47.	.0024	.0150	.0058	.0135	-.0011	.0079	1.0
47.	.0012	.0112	.0064	.0143	-.0047	.0138	2.0
47.	-.0022	.0155	.0058	.0169	-.0073	.0128	3.0
47.	-.0025	.0160	.0058	.0219	-.0124	.0135	4.0
47.	-.0073	.0160	.0080	.0205	-.0180	.0157	5.0
47.	-.0066	.0181	.0163	.0260	-.0270	.0195	6.0
47.	-.0095	.0239	.0215	.0304	-.0372	.0250	7.0
47.	-.0149	.0299	.0244	.0345	-.0505	.0287	8.0
47.	-.0213	.0350	.0275	.0408	-.0640	.0336	9.0
47.	-.0252	.0410	.0323	.0479	-.0781	.0381	10.0
47.	-.0249	.0424	.0387	.0568	-.0966	.0468	11.0
47.	-.0321	.0532	.0368	.0670	-.1099	.0548	12.0
47.	-.0322	.0618	.0375	.0733	-.1281	.0606	13.0
47.	-.0295	.0674	.0368	.0799	-.1452	.0668	14.0
47.	-.0281	.0804	.0364	.0893	-.1570	.0733	15.0
47.	-.0164	.0849	.0354	.0965	-.1642	.0793	16.0
47.	-.0080	.0934	.0248	.0962	-.1776	.0822	17.0
47.	.0053	.1035	.0162	.1032	-.1843	.0900	18.0
47.	.0253	.1110	.0076	.1057	-.1941	.0925	19.0
47.	.0452	.1177	-.0045	.1011	-.2042	.0983	20.0
47.	.0749	.1240	-.0194	.1005	-.2140	.1043	21.0
47.	.1068	.1374	-.0336	.1008	-.2185	.1157	22.0
47.	.1395	.1488	-.0499	.1039	-.2245	.1250	23.0
47.	.1789	.1591	-.0764	.1142	-.2272	.1331	24.0
47.	.2248	.1700	-.1007	.1241	-.2259	.1425	25.0
47.	.2686	.1796	-.1308	.1304	-.2243	.1497	26.0
47.	.3177	.1924	-.1625	.1416	-.2208	.1602	27.0
47.	.3676	.1990	-.2001	.1575	-.2065	.1736	28.0
47.	.4198	.2089	-.2454	.1719	-.1886	.1882	29.0
47.	.4767	.2197	-.2878	.1865	-.1619	.2062	30.0
47.	.5319	.2258	-.3374	.2050	-.1305	.2211	31.0
47.	.5850	.2326	-.3928	.2207	-.0957	.2402	32.0
47.	.6365	.2406	-.4525	.2377	-.0560	.2513	33.0
47.	.6950	.2431	-.5051	.2542	-.0245	.2570	34.0
47.	.7425	.2391	-.5588	.2711	.0120	.2628	35.0
47.	.7838	.2321	-.6159	.2818	.0487	.2680	36.0
47.	.8147	.2312	-.6691	.3047	.0881	.2716	37.0
47.	.8409	.2194	-.7145	.3243	.1292	.2700	38.0
47.	.8561	.2238	-.7550	.3418	.1694	.2731	39.0
47.	.8652	.2238	-.7870	.3570	.2133	.2737	40.0
47.	.8708	.2285	-.8087	.3869	.2524	.2716	41.0
47.	.8691	.2478	-.8206	.4115	.2947	.2694	42.0
47.	.8533	.2706	-.8250	.4363	.3303	.2714	43.0
47.	.8375	.3023	-.8197	.4602	.3654	.2707	44.0
47.	.8014	.3324	-.8070	.4806	.4070	.2794	45.0
47.	.7676	.3698	-.7816	.4861	.4393	.2875	46.0
47.	.7088	.3996	-.7521	.4770	.4679	.2899	47.0
47.	.6631	.4264	-.7089	.4708	.4947	.2936	48.0
47.	.6088	.4435	-.6724	.4683	.5173	.2918	49.0
47.	.5469	.4557	-.6272	.4624	.5297	.2884	50.0
47.	.4897	.4663	-.5773	.4520	.5405	.2855	51.0
47.	.4325	.4627	-.5244	.4388	.5446	.2806	52.0
47.	.3780	.4478	-.4815	.4257	.5447	.2770	53.0
47.	.3226	.4267	-.4402	.4025	.5420	.2714	54.0

QRS WAVE FOR FEMALE AGE 35 FRANK LEAD SYSTEM (cont.)

47.	.2703	.4081	-.3939	.3762	.5359	.2678	55.0
47.	.2186	.3922	-.3446	.3562	.5285	.2685	56.0
47.	.1688	.3632	-.2968	.3342	.5211	.2653	57.0
47.	.1279	.3346	-.2568	.3161	.5074	.2646	58.0
47.	.0930	.3120	-.2135	.2908	.4976	.2566	59.0
47.	.0587	.2730	-.1723	.2611	.4791	.2498	60.0
47.	.0202	.2399	-.1368	.2395	.4621	.2407	61.0
47.	-.0105	.2147	-.1083	.2172	.4394	.2349	62.0
47.	-.0346	.1779	-.0898	.2040	.4136	.2294	63.0
47.	-.0468	.1516	-.0690	.1900	.3902	.2206	64.0
47.	-.0602	.1345	-.0522	.1747	.3666	.2130	65.0
47.	-.0632	.1225	-.0360	.1617	.3385	.1998	66.0
47.	-.0636	.1091	-.0200	.1511	.3112	.1926	67.0
47.	-.0658	.0994	-.0146	.1407	.2840	.1820	68.0
47.	-.0667	.0930	-.0028	.1301	.2608	.1702	69.0
47.	-.0651	.0861	.0041	.1211	.2363	.1620	70.0
47.	-.0622	.0819	.0086	.1115	.2117	.1536	71.0
46.	-.0614	.0752	.0143	.1094	.1957	.1440	72.0
46.	-.0595	.0739	.0165	.1047	.1736	.1386	73.0
45.	-.0545	.0737	.0201	.0969	.1562	.1302	74.0
43.	-.0557	.0681	.0199	.0939	.1437	.1212	75.0
42.	-.0464	.0660	.0253	.0953	.1303	.1139	76.0
41.	-.0479	.0591	.0268	.0925	.1173	.1055	77.0
39.	-.0454	.0581	.0257	.0957	.1047	.1011	78.0
37.	-.0425	.0548	.0248	.0944	.0935	.0976	79.0
35.	-.0410	.0529	.0199	.0921	.0836	.0875	80.0
35.	-.0352	.0524	.0201	.0891	.0715	.0817	81.0
33.	-.0337	.0480	.0216	.0899	.0597	.0781	82.0
33.	-.0285	.0405	.0239	.0852	.0524	.0676	83.0
32.	-.0265	.0434	.0162	.0840	.0449	.0666	84.0
28.	-.0271	.0435	.0261	.0825	.0379	.0638	85.0
25.	-.0233	.0451	.0298	.0782	.0327	.0553	86.0
24.	-.0238	.0469	.0220	.0766	.0247	.0523	87.0
22.	-.0170	.0409	.0226	.0754	.0166	.0547	88.0
19.	-.0223	.0420	.0242	.0692	.0202	.0423	89.0
16.	-.0258	.0358	.0236	.0700	.0198	.0353	90.0
15.	-.0223	.0362	.0256	.0687	.0108	.0313	91.0
11.	-.0280	.0303	.0476	.0600	.0147	.0345	92.0
9.	-.0304	.0285	.0485	.0668	.0140	.0343	93.0
8.	-.0285	.0326	.0469	.0581	.0108	.0247	94.0
8.	-.0252	.0289	.0407	.0586	.0069	.0280	95.0
8.	-.0228	.0226	.0444	.0543	.0099	.0326	96.0
6.	-.0243	.0261	.0343	.0642	.0002	.0247	97.0
5.	-.0171	.0175	.0564	.0561	-.0024	.0219	98.0
5.	-.0159	.0176	.0624	.0564	.0033	.0269	99.0
5.	-.0146	.0138	.0558	.0365	-.0021	.0210	100.0
5.	-.0109	.0189	.0607	.0405	.0012	.0224	101.0
3.	.0029	.0164	.0682	.0227	-.0112	.0272	102.0
3.	.0077	.0040	.0446	.0185	-.0158	.0179	103.0
3.	-.0112	.0120	.0304	.0215	-.0213	.0191	104.0
3.	-.0014	.0090	.0239	.0166	-.0247	.0260	105.0
3.	-.0078	.0149	.0163	.0121	-.0274	.0230	106.0

T WAVE FOR FEMALE AGE 35 FRANK LEAD SYSTEM
AVERAGE AGE IS 35.4

N	XBAR	SDX	YBAR	SDY	ZBAR	SDZ	TIME
47.	-.0222	.0295	.0205	.0569	-.0094	.0344	1.0
47.	-.0232	.0288	.0174	.0451	-.0227	.0236	2.0
47.	-.0197	.0310	.0217	.0445	-.0231	.0315	3.0
47.	-.0177	.0242	.0251	.0489	-.0300	.0298	4.0
47.	-.0212	.0255	.0207	.0458	-.0377	.0281	5.0
47.	-.0175	.0289	.0183	.0454	-.0385	.0307	6.0
47.	-.0125	.0300	.0220	.0464	-.0389	.0287	7.0
47.	-.0141	.0229	.0162	.0399	-.0407	.0272	8.0
47.	-.0104	.0271	.0180	.0414	-.0410	.0247	9.0
47.	-.0086	.0285	.0179	.0427	-.0399	.0235	10.0
47.	-.0065	.0297	.0137	.0380	-.0433	.0262	11.0
47.	-.0049	.0292	.0151	.0435	-.0453	.0242	12.0
47.	-.0004	.0320	.0115	.0414	-.0452	.0257	13.0
47.	.0013	.0302	.0119	.0415	-.0450	.0270	14.0
47.	.0058	.0295	.0097	.0496	-.0474	.0312	15.0
47.	.0022	.0331	.0049	.0489	-.0487	.0268	16.0
47.	.0088	.0300	.0038	.0441	-.0485	.0299	17.0
47.	.0130	.0319	-.0001	.0431	-.0492	.0297	18.0
47.	.0126	.0317	-.0016	.0527	-.0523	.0329	19.0
47.	.0184	.0314	-.0034	.0495	-.0547	.0320	20.0
47.	.0218	.0338	-.0035	.0435	-.0508	.0323	21.0
47.	.0259	.0375	-.0127	.0526	-.0549	.0341	22.0
47.	.0290	.0427	-.0072	.0498	-.0558	.0284	23.0
47.	.0358	.0406	-.0145	.0456	-.0544	.0331	24.0
47.	.0364	.0457	-.0205	.0482	-.0611	.0325	25.0
47.	.0428	.0484	-.0302	.0467	-.0653	.0337	26.0
47.	.0478	.0497	-.0310	.0522	-.0702	.0367	27.0
47.	.0619	.0466	-.0344	.0551	-.0680	.0375	28.0
47.	.0712	.0591	-.0431	.0557	-.0721	.0422	29.0
47.	.0826	.0604	-.0518	.0610	-.0784	.0446	30.0
47.	.0929	.0639	-.0630	.0633	-.0823	.0454	31.0
47.	.1090	.0686	-.0658	.0692	-.0841	.0486	32.0
47.	.1256	.0776	-.0809	.0711	-.0851	.0519	33.0
47.	.1391	.0803	-.0950	.0718	-.0947	.0584	34.0
47.	.1573	.0856	-.1049	.0745	-.0936	.0549	35.0
47.	.1731	.0897	-.1206	.0812	-.0948	.0618	36.0
47.	.1917	.0949	-.1356	.0805	-.1016	.0667	37.0
47.	.2024	.0926	-.1490	.0841	-.1008	.0658	38.0
47.	.2210	.0970	-.1607	.0878	-.0993	.0674	39.0
47.	.2319	.0980	-.1767	.0876	-.1023	.0696	40.0
47.	.2348	.1019	-.1944	.0879	-.1078	.0775	41.0
47.	.2487	.1006	-.2002	.0893	-.1017	.0701	42.0
47.	.2556	.1007	-.2055	.0896	-.0967	.0705	43.0
47.	.2564	.0951	-.2173	.0917	-.0977	.0688	44.0
47.	.2548	.0931	-.2157	.0917	-.0984	.0653	45.0
47.	.2485	.0914	-.2178	.0885	-.0906	.0647	46.0
47.	.2304	.0855	-.2167	.0907	-.0866	.0591	47.0
47.	.2110	.0834	-.2027	.0859	-.0837	.0556	48.0
47.	.1869	.0767	-.1951	.0784	-.0755	.0508	49.0
47.	.1613	.0725	-.1733	.0694	-.0731	.0430	50.0
47.	.1358	.0654	-.1569	.0695	-.0689	.0415	51.0
47.	.1081	.0608	-.1379	.0605	-.0588	.0369	52.0
47.	.0835	.0519	-.1169	.0560	-.0563	.0389	53.0
47.	.0622	.0466	-.0968	.0505	-.0456	.0307	54.0
47.	.0436	.0459	-.0787	.0477	-.0422	.0327	55.0
47.	.0298	.0361	-.0666	.0461	-.0374	.0345	56.0
47.	.0205	.0347	-.0503	.0461	-.0309	.0278	57.0
47.	.0076	.0298	-.0423	.0457	-.0296	.0269	58.0
47.	.0010	.0309	-.0357	.0441	-.0269	.0274	59.0
47.	-.0027	.0270	-.0242	.0426	-.0198	.0278	60.0