

HTS820TC TRENSCenter Central Station Cardiac Monitor REHAB Operator/Technical Manual

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PREFACE

This manual describes the operation and use of the *TrensCenter* Telemetry System. It is intended for use by clinicians trained in the use of clinical monitoring systems familiar with the associated terms and procedures. The system is intended to be used in Cardio/Pulmonary Rehabilitation. The system is intended to be used in accordance with accepted hospital and clinical protocols and the instructions contained in this manual. Use of the system with other than supplied accessories or parts may result in inaccurate patient information or damage to the monitor.

The manual contains detailed descriptions of all controls and indicators. Each control of the system is depicted in this manual by the use of hand symbols:



When a specific control function is described, a hand symbol will point to the location of that control key or button.

Those controls appearing on a keyboard or keypad are referred to as keys. Additionally, Button Controls are as shown below:

VIEW STORED EVENTS		MANUAL STORE EVENT		SETUP PATIENT		VIEW WAVES	RECORD
08/10/01	10:00:00	SILENCE	VOLUME UP	VOLUME DOWN	STORE ALL	STATUS	RECORD

NOTE statements are for general information applicable to the current subject and appear in ***bold italic*** type style. Note statements appear as shown below:

NOTES

Note Information.

CAUTION statements in the manual identify conditions or operations that could result in damage to the system or other property. Caution statements appear in UPPERCASE as shown below:

CAUTION

CAUTION INFORMATION.

WARNING statements in the manual identify conditions or operations that could result in personal injury. Warning statements appear in **UPPERCASE BOLD** type style as shown below:

WARNING!

WARNING INFORMATION.

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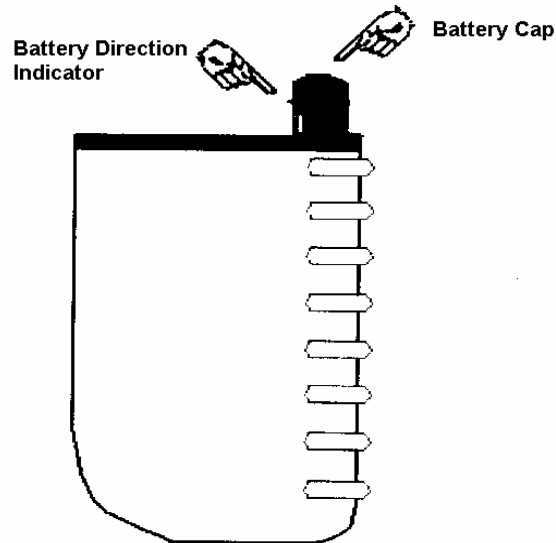
SAFETY SUMMARY

- 1) **Do Not** autoclave the patient transmitters.
- 2) Frequent electrical and visual checks should be made on electrode wires. Broken or frayed electrode wires or loose fittings may cause interference or loss of signal. Particular attention should be paid to the point where the electrode wire enters the snap fittings since flexure will eventually cause breakage of strands at this point.
- 3) **Do Not** operate this product in the presence of flammable anesthetics. Explosion may result.
- 4) If the system is connected to accessory equipment, leakage current requirements must be maintained.
- 5) To insure patient safety, use only software, accessories and parts recommended by the manufacturer.
- 6) A product that has been dropped or severely abused should be checked by qualified service personnel to verify proper operation.
- 7) Component replacement or adjustment must be made only by qualified service personnel.
- 8) Patient transmitters have limited range. Ensure that patients remain within the area covered by the antenna system.
- 9) The system is intended as a complement to, not a substitute for, patient observation by trained health care personnel. Do not rely entirely on the alarm, arrhythmia or paging structure of the system.
- 10) **WARNING PACEMAKER PATIENTS.** Heart Rate Counts on patients with pacemakers may be erratic. Follow the instructions contained in the *Paced Patients* section of this manual. Keep pacemaker patients under close observation.
- 11) Do not place any item on top of the receiver enclosure that would obstruct airflow since heat may build up and cause damage to receivers.
- 12) Do not allow objects to rest on keyboard since erroneous data may be entered into patient chart and certain keys may cause adverse operations.
- 13) The fans on the processor chip and the power supply require periodic cleaning (based on hospital environ). Use forced air not vacuum.
- 14) If the system has been shipped or moved, remove the cover and check all to make sure they are seated properly.
- 15) Do not connect or disconnect any peripheral devices while power is applied to the CPU. Damage may occur. This includes mouse and keyboard.
- 16) Do not attempt to run other programs on this system. Other programs may interfere with the TrensCenter program.
- 17) If circuit boards need to be removed leave the power cord plugged in to prevent static damage.
- 18) Do not over amplify antenna system.

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Attaching the Transmitter to the Patient (Cont.)

Gently abrade the electrode sites with an alcohol prep pad until slight redness is observed. Dry the site before applying the electrodes. Attach the electrodes to the lead wires. Insert the batteries in the transmitter as follows:



Hold the transmitter in one hand. Using the other hand thumb and index finger, grasp the battery cap and turn counter clockwise until the cap can be removed. Insert both batteries with the positive ends up. See the battery direction indicator on the battery cap. Repeat the above instructions for the battery cap but rotate the cap clockwise.

CAUTION

MAKE SURE THE BATTERIES ARE INSTALLED CORRECTLY. IF THE BATTERIES ARE INSTALLED INCORRECTLY, THE TRANSMITTER WILL NOT FUNCTION.

MAKE SURE THAT THE BATTERY CAP IS TIGHT. IF THE CAP IS NOT TIGHTENED PROPERLY, THE TRANSMITTER MAY BE INTERMITTENT AND THE WATER PROOFING SEAL MAY LEAK CAUSING DAMAGE TO THE TRANSMITTER

Attach the electrodes to the patient on the prepared sites. Apply pressure to the outer edges of the electrode, not the center. Applying pressure to the center may cause the electrode conductive jelly to ooze out resulting in a loose electrode.

If it is desirable to start the recorder from the transmitter, press and hold the *remote record* control for approximately 2 seconds. This will generate a 20 second strip at the central station. See the *Remote Record* section of this manual.

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Admitting Patients to the System for Monitoring --Group Admit

To begin monitoring patients on the system, touch **ADMISSION** control at the bottom of the main screen.

8							OFF
9/19/97	08:57:21 PM	ALARM SILENCE	DATABASE	ADMISSION	STATUS	STORE ALL	RECORD ALL

If the patients were admitted to the database in specific groups and will be monitored in groups touch the **GROUP** button. This will display Group 1.

GROUP 1 SELECTED. USE GROUP BUTTON TO SELECT NEXT GROUP										
EDIT LOG	RHB REPORTS	NOTES	REMAINING	SELECT	GROUP	ADMIT				
NAME	CHAN #	WT	SYST	DIAST	READMIL	ARM	ERG	ROW	CYCLE	
CALDWELL, R [1]	1				1	2	3	4	4	
ROGERS, C [1]	3				2	3	4	1	1	
HAYES, T [1]	4				3	4	1	2		
CUTSHAW, B [1]	2				4	1	2	3		

Continue touching the Group button until the desired group is displayed. The group number is displayed above the screen on the instruction bar.

When the desired group is displayed it is now possible to enter the daily weight and resting pressures. Place the cursor in the box under weight for the desired patient. Type in the weight. Use TAB, arrows or mouse to move to SYST. Enter Systolic pressure. Repeat for diastolic pressure.

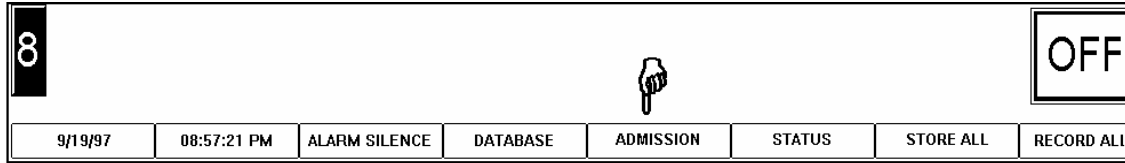
When all patient weight and pressures are entered, assign the transmitters to the patients based on the CHAN #. These are the channels assigned when the patient was admitted to the database. These numbers can be changed. Use caution that numbers are not duplicated since one patient will not be admitted.

When all information is correct touch **ADMIT**. All patients selected should now be displayed on main screen.

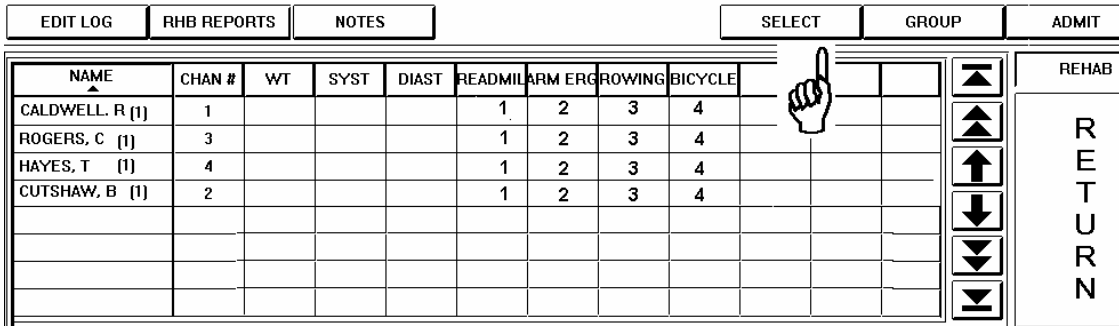
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Admitting Patients to the System for Monitoring --Individual Admit

To begin monitoring patients on the system, touch **ADMISSION** control at the bottom of the main screen.



The Admission Screen will be displayed.



If the patients were not admitted to the database in specific groups and will be monitored as individuals, touch the **SELECT** button, then touch the name of the patient desired. The patient name will be inverse to indicate that the patient is selected for monitoring.

CHAN# column indicates which channel is assigned when the patient was selected. The channels are assigned on a first come first served basis. The channel number may be changed by touching the patient name until the desired channel is displayed.

When all patients are selected and high lighted it is now possible to enter the daily weight and resting pressures. Place the cursor in the box under weight for the desired patient. The previous entered weight will be displayed in AMBER. Type in the weight. Use TAB, arrows or mouse to move to SYST. Enter Systolic pressure. Repeat for diastolic pressure.

CHAN# column indicates which channel is assigned when the patient was selected. The channels are assigned on a first come first served basis. These numbers can be changed by selecting and deselecting the patient until the correct channel is displayed.

When all information is correct touch **ADMIT**. All patients selected should now be displayed on main screen.

To enter progress notes on a patient, click on **NOTES**, type the desired information.

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Monitoring Patients – Start Session

When the patients are admitted to the system the following MAIN screen will be displayed.

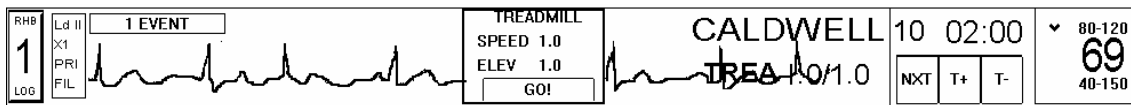


The patient name is displayed on the right side of the trace. The timer is displayed to the right of the patient name. The target limits are displayed above the heart rate and the main rate alarms are displayed below the rate.

When the start session button is displayed the patient is not monitored. Notice the ALARMS OFF message displayed to left of trace.

NOTE: After admission it will take approximately 40 seconds to obtain a valid heart rate. Wait until the rate is stable, this rate is the resting heart rate and all values are determined from this rate.

When a stable Heart Rate is displayed touch **START SESSION**. The following screen will be displayed.



When **START SESSION** is touched the system will automatically save an ECG strip, notice label 1 EVENT to left of trace, this strip will be the pre-test strip.

The first scheduled device will be flashing in green under the patient name. The time programmed for this device is displayed between name and heart rate.

If the device is not available or the order of exercise is to be changed for this session only touch **NXT** to bypass the treadmill and select the second device.

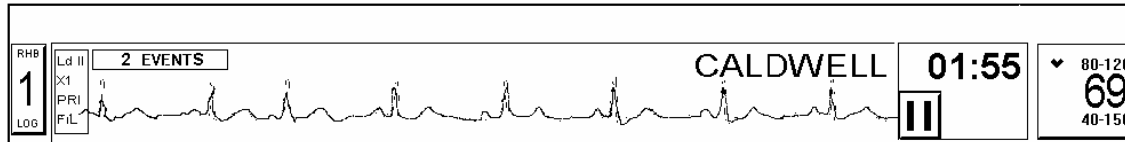
The **T+** AND **T-** keys are used to adjust the time of exercise by raising or lowering the timer.

The center box will indicate the settings for the device selected. To change these settings, with mouse or touch position the cursor over the setting to change, type in the new settings.

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MONITORING PATIENTS—Go-Pause-Resume-Cancel

When all settings are adjusted touch **GO** in the box in the middle of the screen. The screen will change to the following:



The timer has started counting down and will alarm when the session has 30 seconds (or user defined time) left.

The control under the timer is the **PAUSE** control. If the patient has to stop the test or if the workload settings need to be changed, touch the **PAUSE** control.



The **CANCEL** and **RES** (Resume) control will now be displayed..

To change the workload, touch the setting in the center box to change. Type in the new setting.

To continue the test, using the elapsed time, touch the **RES** in the timer box.

To reset the timer to the initial setting, touch the **GO** in the center device box.

If the patient is unable to continue touch the **CANCEL** control. This cancels the test for this device

If the test was cancelled or the device timed out, the system now indicates 2 EVENTS are stored. This event is the Maximum Rate strip for this exercise device.

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MONITORING PATIENTS – Vital Sign Data Entry

To enter vital sign information touch the **channel number** of the patient monitored. The Rehab log will be displayed.

COMMENTS PRINT	HR	GLU	SYS	DIA	MTS	RPE	SO2	%TR	LO2	DYS	TIME	DEVICE	REASON	COMMENTS
01/07 11:07 AM	70		126	85			98	70			1 MIN	Warmup	PRE	
01/07 11:07 AM	70							70				TM 2.0 /1.	MAX	

Line 1 indicates the pretest information and line two represents the information for the Treadmill. Position the cursor over the box for SYS and type in the systolic pressure. Touch the DIA box and enter diastolic pressure. Continue with RPE and O2 saturation if desired.

Repeat the above steps for all remaining devices.

To enter data on all of the patients from one screen without having to go back and forth between patients do the following. Touch any patient's name.

Touch **REHAB LOG**.

MAIN	NAME/RM/ID	ALARMS	TRENDS	RHB LOG	VIEW	EVENTS	DISCLOSURE
DISCHARGE	SIZE	1	ALARM ON	1	6	11	16
RELEARN	START	0 AM	ARRHY ON	2	7	12	17
MONITOR	INT	0	PACER	3	8	13	18
PRIMARY	CHART	0	LONG RECORD	4	9	14	19
MONITORED			REMOTE REC	5	10	15	20
							SETUP
							R E T U R N

PRINT COMMENTS	HR	GLU	SYS	DIA	MTS	RPE	SO2	%TR	LO2	DYSP	TIME	DEVICE	REASON	COMMENTS
CALDWELL,R	89		120	80			98	55					PRETEST	
ROGERS,C	123		132	86			98	88					PRETEST	
HAYES,T	115		120	80									PRETEST	
MCCONNELL,G	120		120	80									PRETEST	
STONE,P	90		120	80									PRETEST	

EXERCISE STAGES PRETEST 1 2 3 4 5 6

The above screen permits entry of vital signs data on all of the patients admitted from one screen. Touch the appropriate stage number to select the device the patient is presently on.

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Entering Device Comments

Comments may be placed into the patient log report in the **COMMENTS** column or on the bottom one third of the cover page.

LOG COMMENTS

To enter comments into the log report follow the steps below.

COMMENTS ENTRY	HRT	CUU	SVS	DA	MTS	RPE	COO	NTTI	LOD	DYS	TIME	DEVICE	REASON	COMMENTS	REH LOG
SALVO 8-TEAM 09		120	80	1.6		96	55				10		PRETEST		RETURN
SALVO 8-TEAM 122		127	88	2.0	11	88	88				10	DRG	MAX		
SALVO 8-TEAM 115		120	80	2.1	10	96	80				10	PRE	MAX		
SALVO 8-TEAM 130		120	80	1.8	11	95	88				10	POSTEP	MAX		
SALVO 8-TEAM 88		120	80	1.7	10	87	87				10	RECOMM	MAX		

Place the cursor on the line desired under COMMENTS section. Any information can be typed on this line or quick entries may be used.

To use the pre-defined quick entries, hit F2 Function key. The following pull down menu will be displayed.

COMMENTS ENTRY	HRT	CUU	SVS	DA	MTS	RPE	COO	NTTI	LOD	DYS	TIME	DEVICE	REASON	COMMENTS	REH LOG
SALVO 8-TEAM 09		120	80	1.6		96	55				10		PRETEST		RETURN
SALVO 8-TEAM 122		127	88	2.0	11	88	88				10	DRG	MAX	1 Base PAC's	
SALVO 8-TEAM 115		120	80	2.1	10	96	80				10	PRE	MAX	2 Normal sinus rhythm	
SALVO 8-TEAM 130		120	80	1.8	11	95	88				10	POSTEP	MAX	3 Within Target Limits	
SALVO 8-TEAM 88		120	80	1.7	10	87	87				10	RE COMM	MAX	4 Good Pace	
														5 Short of Breath	

Select the number desired from keypad on keyboard 1, 2, etc.

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Entering Session Comments

To enter comments in the additional comments section (bottom third) of the cover page touch the comments button on the rehab log.

COMMENTS	HR	GLU	SYS	DIA	MTS	RPE	SO2	%TR	LO2	DYS	TIME	DEVICE	REASON	COMMENTS
PRINT														
5/4/99 8:10AM	89	120	80	1.6			98	55			10		PRETEST	
5/4/99 8:20AM	123		132	86	2.0	11	98	88			10	BIKE	MAX	
5/4/99 8:20AM	115		120	80	2.1	10	96	93			10	ERG	MAX	
5/4/99 8:20AM	120		120	80	1.8	11	95	98			10	RUSTEP	MAX	
5/4/99 8:20AM	90		120	80	1.7	10	97	87			10	RECUMBE	MAX	

RHB LOG

 RETURN

This will open a section of the screen to allow typing of approximately 800 characters.

COMMENTS	HR	GLU	SYS	DIA	MTS	RPE	SO2	%TR	LO2	DYS	TIME	DEVICE	REASON	COMMENTS
Enter Comments for Caldwell, Roger 														

RHB LOG

 RETURN

When all comments are typed touch RETURN.

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Non-ECG Monitoring – Pulmonary & Phase III

If the patient is not to be monitored for ECG yet the information should be placed in the REHAB LOG following is the procedure to use.

Admit the patient in the normal fashion. When the patient is admitted for the first time touch the **SETUP** control for that patient. The SETUP screen will appear.

MAIN	NAME/RM/ID	ALARMS	TRENDS	REPORT	VIEW	EVENTS	DISCLOSURE
DISCHARGE	SIZE	1	ALARM ON	1	6	11	16
RELEARN	START	0 AM	ARRHY ON	2	7	12	17
MONITOR	INT	0	PACER	3	8	13	18
PRIMARY	INT	0	LONG RECORD	4	9	14	19
MONITORED	CHART	0	REMOTE REC	5	10	15	20
							<div style="background-color: black; color: white; padding: 2px; text-align: center;">SETUP</div> <div style="text-align: center; font-size: 2em; font-weight: bold; letter-spacing: 0.5em;">R E T U R N</div>

If the patient is to be monitored without ECG touch the **MONITORED** control. The control label will change to **NON-MONITORED**. The ECG will turn off but the patient name and exercise protocol will remain. It will be possible to enter data into the Rehab Log and retain that data for the duration of the exercise sessions.

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Discharging Patients

When the patient's heart rate reaches the preset level the following screen will be displayed.



NOTE: Do not discharge patient until post vital sign information is entered into rehab record.

Touch the **DISCHARGE** button to discharge the patient. If the patient rate does not return to resting touch the waveform in the **MANUAL STORE** area this will store a posttest event and display the DISCHARGE button.

If it is necessary to discharge the patient before exercise is completed, touch the patient name. When the setup screen is displayed, touch DISCHARGE. The following screen will be displayed



If the patient is to be discharged touch the YES button. If all patients are to be discharged touch DISCHARGE ALL. All patients will be discharged. If discharge was touched by mistake touch NO and the system will return to the main screen,

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Edit and Print Daily Session Report

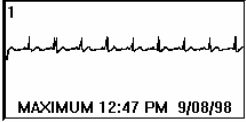
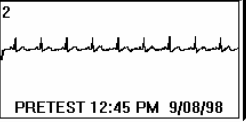
After the patient has been discharged and it becomes necessary to edit information, add additional comments or print a second copy of the report do the following.

Touch **ADMISSION**. Use the arrow keys to scroll the patient list to find the desired patient. Click on the **CHAN #** box of that patient. Click on **EDIT LOG**.

MAIN		EVENTS										DISCLOSURE		DEL SESSION			
COMMENTS PRINT		HR	GLU	SYS	DIA	MTS	RPE	SO2	%TR	LO2	DYSP	TIME	DEVICE	REASON	COMMENTS	RHB LOG	
09/08 12:45 PM		89		120	80			98	55					PRETEST		RETURN ↑ ↓ ↑ ↓ ↓ ↓	
09/08 12:47 PM		123		132	86	2.2	11	98	88		2 MIN	TREADMIL	MAXIMUM				

The **REHAB LOG** will be displayed from the last session attended. Any information can be changed or comments may be added to the report. When the patient is admitted the next time, this record will be locked.

Touch the **EVENTS** control to view the EKG strips for this session.

EDIT LOG				EVENTS	
RECORD	1	2		↑	RETURN ↑ ↓
DELETE				↓	
LIST EVENTS					
PRINT					

See the **EVENTS** section of the main manual for operation. Touch **RETURN** to return to the edit log screen.

NOTE. If events are deleted from this screen the corresponding line of the rehab log will also be deleted with all vital sign information.

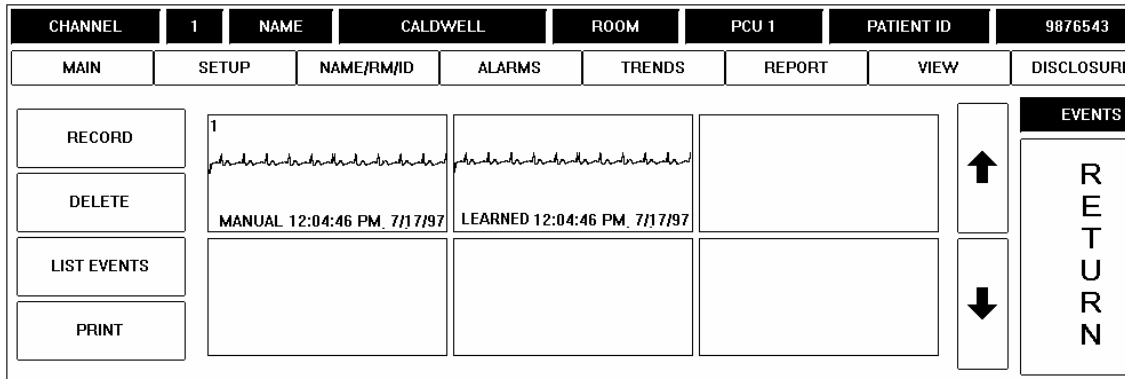
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Events Store-- View –Delete

Events may be stored for all active channels in several ways. Events are automatically stored for pretest, maximum heart rates for each device, alarms and post-test. Manual events may be stored in two ways. At the MAIN Screen click on the patient waveform under the Manual store event column. This stores an event for that patient. At the bottom of the screen note the STORE ALL Button. The STORE ALL Button is a touch and release control. Touch the STORE ALL Button to store manual events for all patients. Touching this control is functionally the same as touching the STORE Column area for each patient.

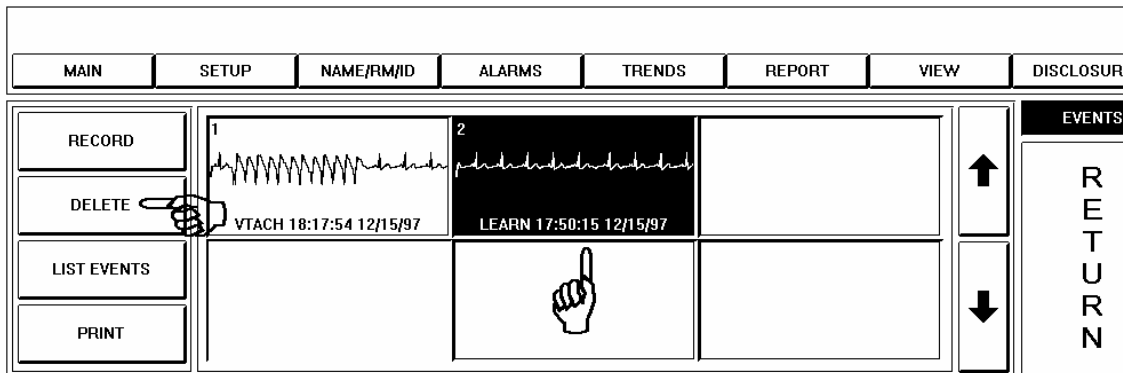


Touch the patient waveform under the VIEW STORED EVENTS Column of the patient channel desired.



The EVENTS Screen is displayed. Both manually stored and learned events are displayed as above. If alarmed events have occurred, they are displayed as well.

To delete stored events click on the desired waveform events and click on DELETE.



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Full Disclosure



At the MAIN Screen, touch the area under the SETUP Column of desired channel number. From the Events screen click on the Disclosure button.

MAIN	NAME/RM/ID	ALARMS	TRENDS	REPORT	VIEW	EVENTS	DISCLOSURE
DISCHARGE	SIZE	1	ALARM ON	1	6	11	16
RELEARN	START	0 AM	ARRHY ON	2	7	12	17
FILTER	INT	0	PACER	3	8	13	18
PRIMARY	CHART	0	LONG RECORD	4	9	14	19
			REMOTE REC	5	10	15	20

SET' P
 RETURN

Note the DISCLOSURE Button above the Screen Label. Touch the DISCLOSURE Button to go to the next display.

MAIN	SETUP	NAME/RM/ID	ALARMS	TRENDS	REPORT	VIEW	EVENTS
20:17	20:17						DISCLOSURE
HOURS	[Waveform]						RETURN
MINUTES	[Waveform]						
INTERVAL	:10 :20 :30 :40 :50						
REFRESH	[Waveform]						
REC STRIP	[Waveform]						
PRINT 1 HR	[Waveform]						

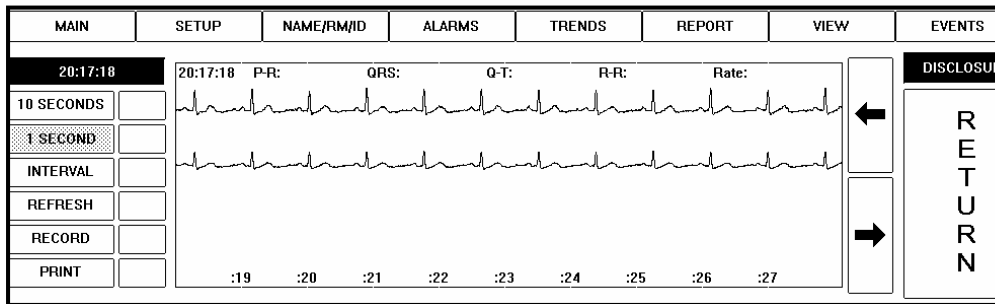
The DISCLOSURE Screen is displayed. To view a minute-by-minute “snapshot” of the Chart for the selected patient, use the ARROW Keys with the MINUTE Key selected, as in this example. To go backward from the displayed time, touch the *Left* ARROW Key. To go forward, touch the *Right* ARROW Key. The MINUTE Key allows you to move forward and backward by minute. The HOURS key allows you to move forward and backward by hour.

To print a 1 hour disclosure click on PRINT 1 HR.

To expand the waveform, touch inside the window at the point to be expanded.

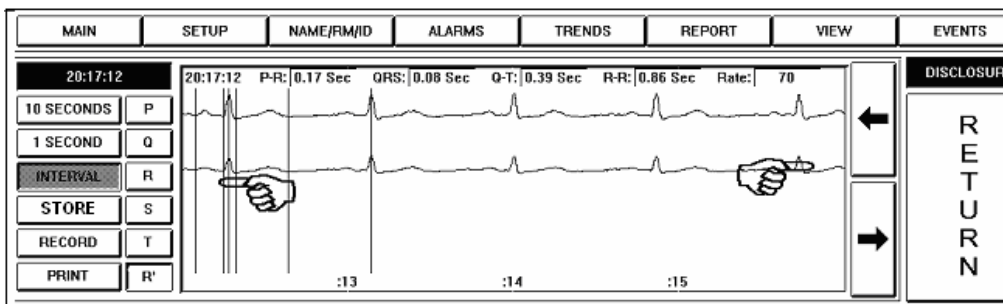
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Full Disclosure (Cont.)



The above example displays the expanded waveform in the 1 second zoomed view. To return to the two-minute view, touch the waveform again. Touch the arrows to move forward or backward in time. The 1-second button will allow scrolling of the waveform. The 10-second button will move the waveform in 10-second increments.

To measure the intervals of the ECG touch the **INTERVAL** button. Touch the **P** button to set the onset of the P wave. Use the left and right arrow keys to adjust the position of the red cursor. Continue touching the Q, R, S, T, and R' keys to adjust the cursor. The interval values will be displayed above the waveform. Click on Print for a print out or click on



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Section 2

Reporting - Archiving

Generating Rehab Reports

To generate the various reports for the rehab system, touch **ADMISSION**.

EDIT LOG	RHB REPORTS	SELECT	GROUP	GROUP DELETE	DELETE	ADMIT			
NAME	CHAN	WT	SYST	DIAST	READMIL	ARM ERG	ROWING	BICYCLE	REHAB
CALDWELL, R (1)									RETURN
ROGERS, C (1)	3								
HAYES, T (1)	4								
CUTSHAW, B (1)	2								

Touch the **RHB REPORTS** control. The report screen will be displayed.

SELECT PATIENT OR PATIENTS TO PRINT REPORTS FOR THEN USE BUTTON FOR DESIRED REPORT.

Rehab Patient Reports

FIRST	LAST	GP	INS
AAA	AAA	1	
A	AAAA	1	
FLOY	ALLEN	1	
DONALD	ARNOLD	1	SP3
LOUISE	ARNOLD	6	BCB
MARY	ARWOOD	27	SP3
MIKE	AUSTIN	0	
MICHEAL	AYRES	3	TC
EARL	BAKER	0	
INEZ	BALTIMORE	0	

SELECT
INDIVIDUAL
GROUP
INSURANCE
ALL
NONE

REPORT	INTERVAL	STRIPS	TYPE
SESSIONS	DAILY	1 MAX HR	DETAIL
TRENDS	WEEK	PRE TEST	SUMMARY
PTN LIST	MONTH	POST TEST	BY DEVICE
SCHEDULE	1ST & LAST	ALARM	PROGRESS
ATTENDANCE	FROM	MANUAL	EXPORT
COMPLIANCE	TO	ALL	PREVIEW
COMMENTS	LAST	12	PRINT
NOTES	ALL		

RHB REPORTS
RETURN

2/20/07

12:33:41 PM

ALARM SILENCE

DATABASE

ADMISSION

CHART ALL

STATUS

PRINT ALL

The headers over the patient list, control the sort order for the list. If the **LAST** name is touched the list will be sorted by last name. If the arrow is pointing up, the patients will be sorted in ascending order. Touch **GP** to sort by group or **INS** by Insurance.

Select the patients to be printed by clicking on patient names. Patients may also be selected by **GROUP**, by **INSURANCE** carrier or **ALL** patients.

Next select the type of **REPORT** desired.

- Sessions:** provides a report of all session activity for the selected patient(s).
- Trends:** provides a trend report for all parameters selected in configuration screen.
- PTN (Patient) List:** prints a list of all patients in the database.
- Schedule:** prints a schedule of groups.
- Attendance:** prints the report of who was present for the specified period.
- Compliance:** prints the attendance reports for patients selected.
- Comments:** adds the comments to the report.
- Notes:** prints the notes for the patient(s) selected.

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Select the **INTERVAL** for the report.

Daily: selects last completed daily activity

Week: selects the last completed week information.

Month: selects the last completed month information.

1st and last: selects data from the first and last sessions for comparison.

From To: allows selection of data from two specific sessions for comparison.

Last: selects reports from the current session back to number selected.

All: allows selection of every session the patient has attended.

Select the **ECG STRIPS** desired with the report.

1 MAX HR selects the highest maximum heart rate strip.

Pre Test selects only the Pre Test strips.

Post Test selects only the Post Test strips.

Alarm selects only strips caused by alarm events.

Manual selects only strips caused by manual store.

All selects all stored strips.

Select the type of report.

Detail prints every entry made in session reports.

Summary reports one line from selected session report with min\max entries.

By Device prints a report sorted by the type exercise device.

Progress prints the progress report.

Select the action desired.

Export (Not in use at this time).












Preview will display the report on screen.

PRINT provides a hard copy on printer.

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Archiving Patient Data


When a patient has completed all prescribed sessions and the data of these sessions are to be kept, it is possible to Archive this data onto a hard drive or removable disk for later analysis. To Archive patient files touch or click on **DATABASE**.

EDIT LOG	RHB REPORTS	GROUP	NEW	ADD/SAVE	DELETE	ARCHIVE	ARCHIVED
FIRST: ROGER ♥ LAST: STREET: CITY: STATE: ZIP: PHONE: [] - GROUP: 0 CHANNEL: 0 COLOR: 0 THR: 120 TLR: 110 INSUR: UIC ??? INS ACCT:	SSN: - - DOB: 03/19/51 AGE: 55 MD: CARREA;EDNEY HT: 67 WT: 149.5 SEX: M ID: 557 Diag: MITRAL VALVE REPLACED 2/21/06 PMHX:	TREADMILL: TIME: 15 AIRDYNE: TIME: 5 ARM ERG: TIME: 5 BICYCLE: TIME: 10 SPD: 4.0 LEV: 0.0 WATS: 25.0 WATS: 0.0 Risk Factors: Meds: Goal: COMPLETE AT LEAST 18 VISIT STRENGTH, ENDURANCE; KNU	ELEV: 4.    	USE  E T U R N	   	USE  E T U R N	USE  E T U R N
9/27/07	09:58:30 AM	ALARM SILENCE	DATABASE	ADMISSION	STORE ALL	STATUS	RECORD ALL

Select the patient to be archived. Touch the **ARCHIVE** control.

Caution: Once patient is archived, they will no longer be available for monitoring.

ARCHIVE PATIENT CALDWELL?



YES

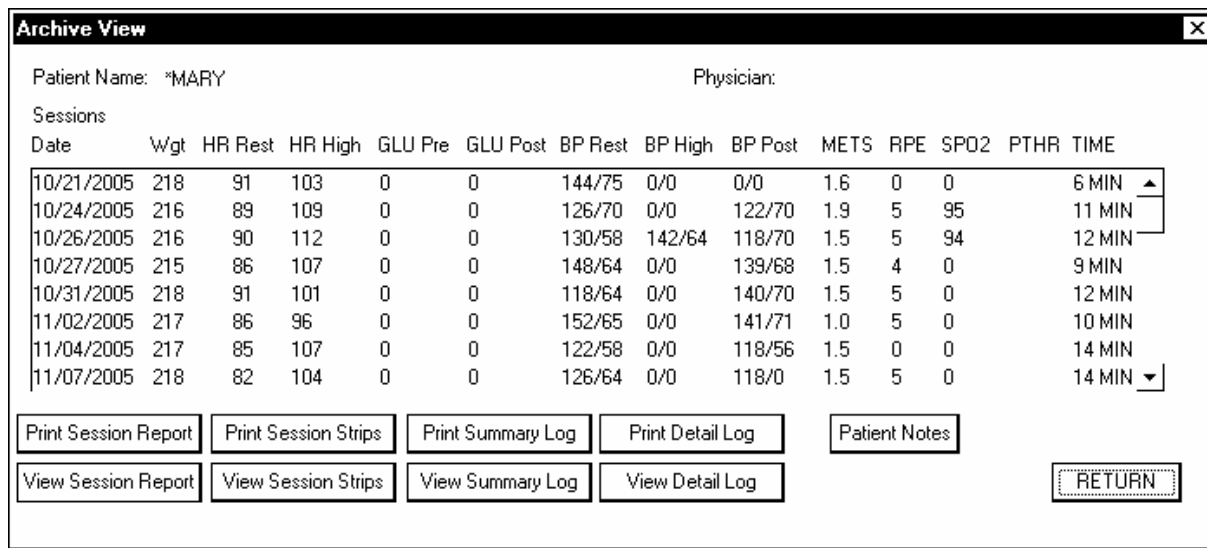
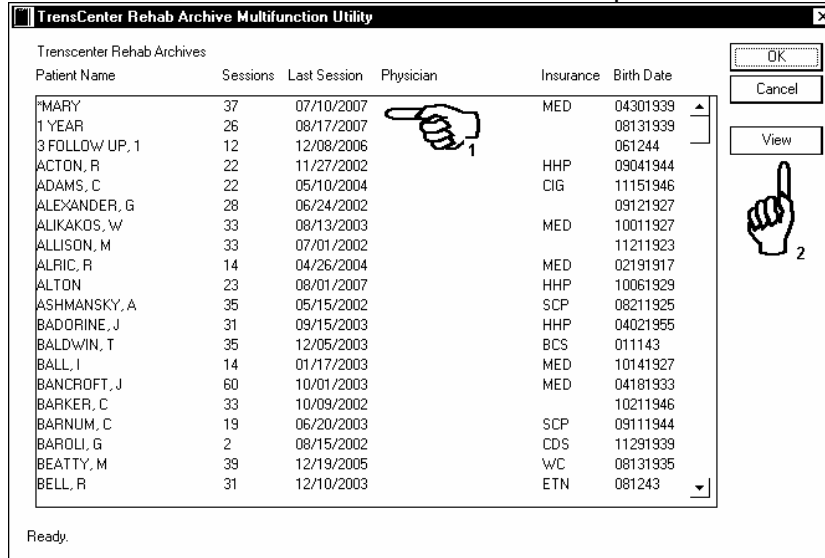
NO

Touch the YES control. All patient data is now archived and the patient will no longer be available for monitoring.

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ARCHIVE PATIENT DATA

If there is a need to recall the information from an archived patient touch the **ARCHIVED** control and select the patient desired., then touch **VIEW**. All session reports are now available.



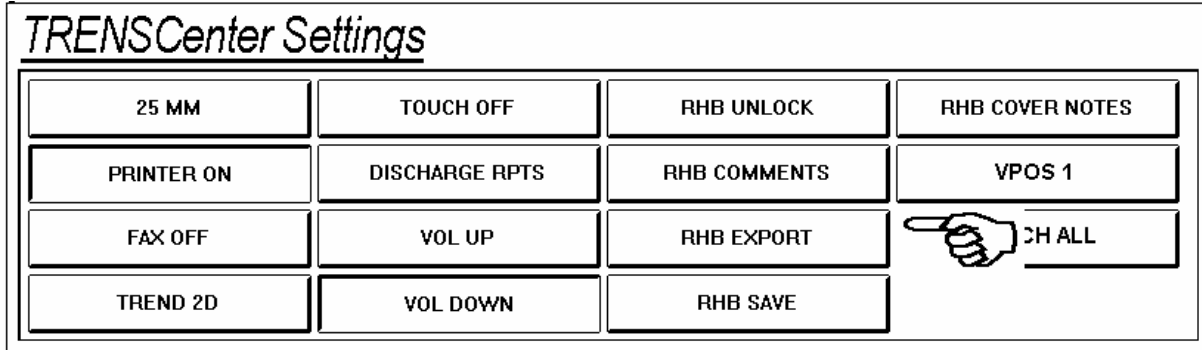
If a daily report is desired, click on the date of the report, To view the reports before printing, click on the View buttons on bottom of screen.

Refer to the Generating Reports for description of each report.

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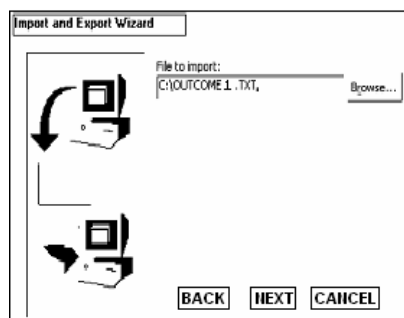
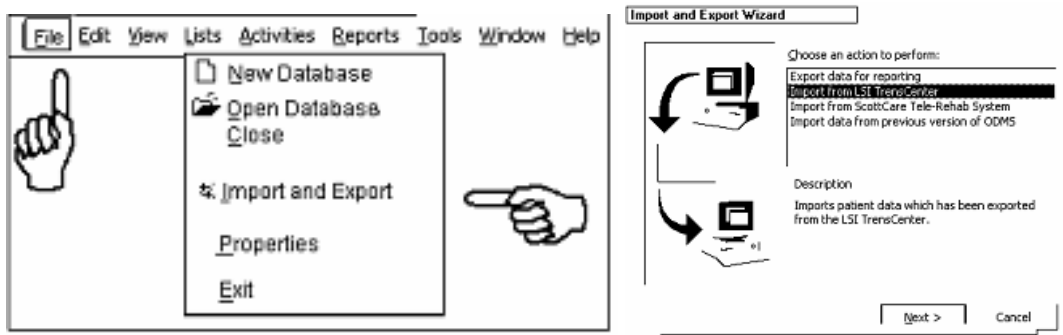
Exporting Data from TrensCenter to Orion

Click on **STATUS**, click on **SETTINGS** control. The SETTINGS screen will be displayed.



Touch the **RHB EXPORT** control. Touch **RETURN**. A file will be created with a list of all active patients demographic data. The name of the file is OUTCOME1.TXT. This file will be imported into the Outcomes Program by the following method.

From the Orion program click on **FILE**, click on **Import and Export**. Click on **Import from LSI TrensCenter**. Click on **Next**.



Place the cursor in the File to Import Box and type in the file name **C:\OUTCOME1.TXT** and click **NEXT**. Click on **Finish**. The data file will be imported into the Outcomes Program.

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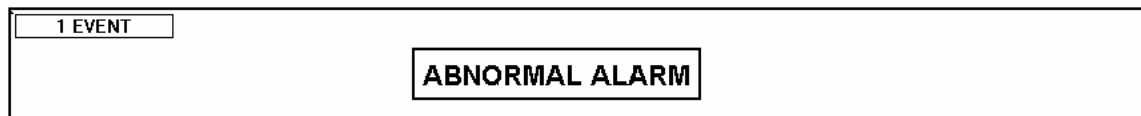
Section 3

Additional Controls

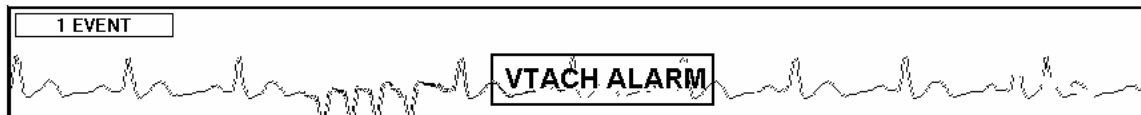
Alarm Indications



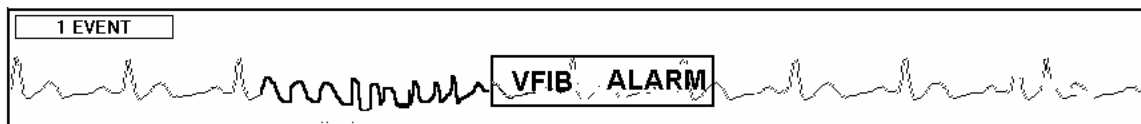
Rate Alarm messages indicate the heart rate has exceeded the high or low limits.



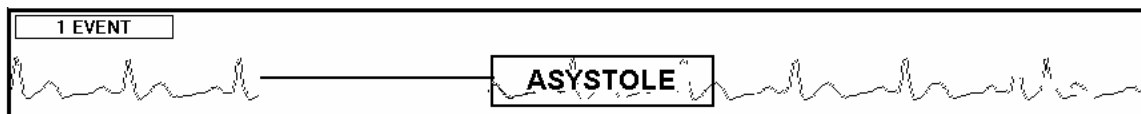
Abnormal Alarm messages indicate the abnormal per minute have exceeded the high alarm limit.



VTACH Alarm messages indicate that there has been an episode of consecutive abnormal.



VFIB Alarm messages indicate the system has detected an episode of **VFIB**.



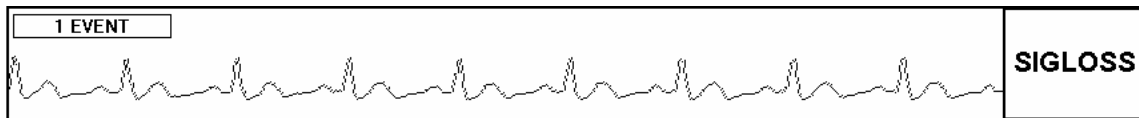
Asystole Alarm messages indicate that the system has detected an episode of Asystole.

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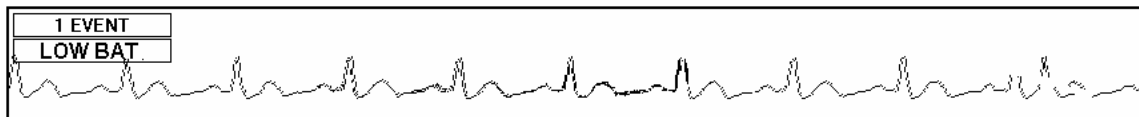
Operator Alerts



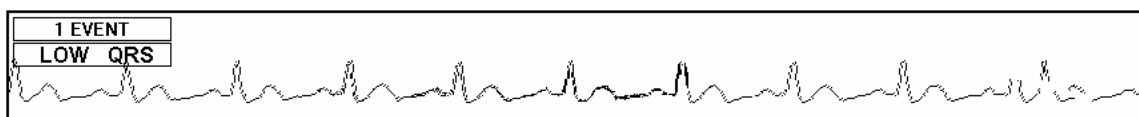
LEAD FAULT messages indicate an electrode is detached or is not making good contact.



SIGNAL LOSS messages indicate the central station is not receiving from the patient transmitter or there is too much noise on the trace for the system to analyze. Check to make sure the patient is within the designated monitoring area, the batteries are good, or there is AC interference on the baseline.

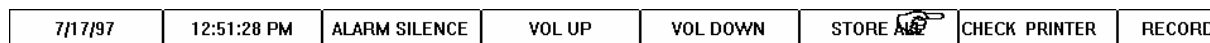


LOW BAT messages indicate the batteries have approximately one hour before they reach a level where the transmitter will no longer function. Replace the batteries as soon as possible when the message appears.



If the size of the QRS is too small for the system to count, a *LOW QRS* message will be displayed. The electrodes must be repositioned to acquire a larger QRS. Normal monitoring should be accomplished through the use of Lead II (white electrode on right clavicle, red electrode on lower left rib cage). Check the patient's 12 Lead EKG for best lead.

Check Printer



Problems with the recorder are reported by the label of the control immediately to the left of the ALL RECORD button. The default label for this button is STATUS. If there is a problem with the printer, the label changes to CHECK PRINTER as above. Check the recorder to insure that it is not out of paper or that the paper is not jammed.

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ALARM SETTINGS

At the MAIN Screen, touch the area under the SETUP Column of the patient channel number desired.



MAIN	NAME/RM/ID	ALARMS	TRENDS	REPORT	VIEW	EVENTS	DISCLOSURE
DISCHARGE	SIZE	1	ALARM ON	6	11	16	RETURN
RELEARN	START	0 AM	ARRHY ON	7	12	17	
FILTER	INT	0	PACER	8	13	18	
PRIMARY	CHART	0	LONG RECORD	4	9	14	
		0	REMOTE REC	5	10	15	

The SETUP Screen is displayed. Touch the ALARM Key. The key displays as recessed and the label changes to ALARM ON. Touch the ARRHY Key. The key displays as recessed and the label changes to ARRHY ON.

Touch the ALARMS Button to go to the ALARMS Screen.

CHANNEL	8	NAME	H, H	TARGET LOW	60	TARGET HIGH	130						
MAIN	SETUP	NAME/LO/HI	TRENDS	RHB LOG	VIEW	EVENTS	DISCLOSURE						
SETTINGS	LOW	HIGH	SETTINGS	LOW	HIGH	SETTINGS	LOW	HIGH	PG: 1	1	2	3	RETURN
HEART RATE	40	150	TEMP	95	104	P2 SYST	20	60	↑	4	5	6	
SYST	100	160	TEMP2	80	80	P2 DIAST	10	30	↓	7	8	9	
DIAST	50	70	P1 SYST	100	160	P2 MEAN	5	40		DELETE	0	ENTER	
MEAN	50	110	P1 DIAST	60	100	ETCO2	0	0					
RESP	3	50	P1 MEAN	50	110	SP02	82						

CHANGING ALARM LIMITS: Alarm Limits are set by touching the keys directly below the LOW and HIGH column heading labels. Note that the key will be displayed as recessed as soon as you touch it, indicating that it is active. To *increase* the limit, touch the UP ARROW Key. To *decrease* the limit, touch the DOWN ARROW Key. Limit settings may also be made by touching the numbers on the numeric keypad. Touch ENTER to confirm the process. Upon touching ENTER, note that the key is no longer recessed.

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Alarm Settings-Arrhythmia

ABN is the number of abnormal beats (PVC'S) per minute.
VTACH limit is the number of PVC'S in a row to be declared VTACH.
The ST limit is the amount of elevation or depression in millimeters from baseline.

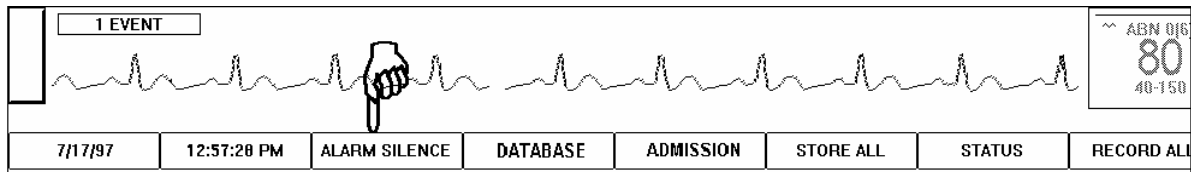
To change a limit, touch the [LOW]/[HIGH] number box to the right of the event to be changed, then touch the UP ARROW Key to increase the limit, DOWN ARROW Key to decrease the limit. The limit setting may also be made by touching the numbers on the numeric keypad. Finally, touch the ENTER Key to confirm the process.

Alarm Settings - Active/Inactive

Note: 1) The HEART RATE, ABN and VTACH alarm buttons respond only to the ALARM ON/OFF and ARRHY ON/OFF buttons respectively, located on the patient setup page.
2) The three blood pressure buttons assigned to each of the three blood pressure types are ganged such that touching one will cause the other two to follow suit.

The various alarms will default to the condition initially set on the [Alarm] page of the TrensCenter Configuration menu. Once changed on the patient setup page, the setting(s) will remain in effect until the current patient has been discharged. Upon admission of a new patient, the alarm settings will again default to the original settings.

Alarm Silence



The SILENCE Button is used to temporarily silence the alarm tone. Touch once to silence alarms. This silences any alarms that are currently active. Any new alarm that occurs after the SILENCE Button has been touched will reactivate the audible alarms. The SILENCE function will time out after two minutes and resume the alarm in progress if the alarm still exists.

Volume Control

Touch STATUS. Touch SETTINGS. Touch the VOL UP and VOL DOWN to adjust the level of the speaker volume.

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Changing Waveform Display Color



At the MAIN Screen, touch the area under the SETUP Column of the patient channel number desired as shown above.

MAIN	NAME/RM/ID	ALARMS	TRENDS	REPORT	VIEW	EVENTS	DISCLOSURE
DISCHARGE	SIZE	1	ALARM ON	1	6	11	16
RELEARN	START	0 AM	ARRHY ON	2	7	12	17
FILTER	INT	0	PACER	3	8	13	18
PRIMARY	CHART	0	LONG RECORD	4	9	14	19
			REMOTE REC	5	10	15	20
							SETUP
							R E T U R N

The panel beneath the patient waveforms contains a color selection keypad. In this example, the display color is Color Number 1 and the Color Number 1 Key is depressed. To change the display color, touch the Color Number desired. Touch RETURN to return to the MAIN screen. The patient's display color has been updated.

Changing ECG Waveform Size

At the MAIN Screen, touch the area under the SETUP Column of the patient channel number desired as shown above.

MAIN	NAME/RM/ID	ALARMS	TRENDS	REPORT	VIEW	EVENTS	DISCLOSURE
DISCHARGE	SIZE	1	ALARM ON	1	6	11	16
RELEARN	START	0 AM	ARRHY ON	2	7	12	17
FILTER	INT	0	PACER	3	8	13	18
PRIMARY	CHART	0	LONG RECORD	4	9	14	19
			REMOTE REC	5	10	15	20
							SETUP
							R E T U R N

The SETUP Screen is displayed. Note the SIZE Label. The ECG display size is adjusted by touching the numeric SIZE Key immediately to the right of the SIZE Label. The normal size setting is 1 as shown above. The ECG may be displayed at half normal size, normal size, twice-normal size and four times normal size. In this example, touching the Size Key four times would cycle the ECG display size through 2, 4, 1/2, and back to 1.

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Relearn of ECG Rhythm

At the MAIN Screen, touch the area under the SETUP Column of the patient channel number desired.



MAIN	NAME/RM/ID	ALARMS	TRENDS	REPORT	VIEW	EVENTS	DISCLOSURE
DISCHARGE	SIZE	1	ALARM ON	1	6	11	16
RELEARN	START	0 AM	ARRHY ON	2	7	12	17
FILTER	INT	0	PACER	3	8	13	18
PRIMARY	CHART	0	LONG RECORD	4	9	14	19
			REMOTE REC	5	10	15	20
							RETURN

If the system is counting a normal complex as an *abnormal*, such as, Bundle Branch Block, Aberrancy or Paced Patients, touch the RELEARN key. The system will look at the next 60 complexes to establish a new normal complex for that patient.

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Filter and Monitor

Touch the setup area of patient desired.



MAIN	NAME/RM/ID	ALARMS	TRENDS	REPORT	VIEW	EVENTS	DISCLOSURE
DISCHARGE	SIZE	1	ALARM ON	1	6	11	16
RELEARN	START	0 AM	ARRHY ON	2	7	12	17
MONITOR	INT	0	PACER	3	8	13	18
PRIMARY	CHART	0	LONG RECORD	4	9	14	19
			REMOTE REC	5	10	15	20
							RETURN

The FILTER selection is used to present a clean waveform by removing the artifact from the baseline of the ECG. Note the key labeled MONITOR. This is a two-state selection key to toggle between FILTER Mode and MONITOR Mode. In the above example, FILTER Mode is available for selection and MONITOR Mode is the active state. FILTER Mode is the default. Note that the key is recessed. Touch the MONITOR Key to go the next display. MONITOR Mode removes the artifact filter and allows more signal to be displayed. This might be used when a pacemaker spike is present and a larger spike is required for display.

MAIN	NAME/RM/ID	ALARMS	TRENDS	REPORT	VIEW	EVENTS	DISCLOSURE
DISCHARGE	SIZE	1	ALARM ON	1	6	11	16
RELEARN	START	0 AM	ARRHY ON	2	7	12	17
FILTER	INT	0	PACER	3	8	13	18
PRIMARY	CHART	0	LONG RECORD	4	9	14	19
			REMOTE REC	5	10	15	20
							RETURN

The key label has toggled to FILTER and the key is displayed as recessed. Filter mode is used to remove the artifact from baseline of the ECG to allow better viewing.

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Back-up Transmitter

At the MAIN Screen, touch the area under the SETUP Column of the patient channel number desired.



MAIN	NAME/RM/ID	ALARMS	TRENDS	REPORT	VIEW	EVENTS	DISCLOSURE	
DISCHARGE	SIZE	1	ALARM ON	1	6	11	16	SETUP RETURN
RELEARN	START	0 AM	ARRHY ON	2	7	12	17	
MONITOR		0	PACER	3	8	13	18	
PRIMARY	CHART	0	LONG RECORD	4	9	14	19	
		0	REMOTE REC	5	10	15	20	

The SETUP Screen is displayed. The control for the receiver should show PRIMARY, as above. If it is necessary to use the Auxiliary (Back-up) Transmitter, touch the PRIMARY key. The key label changes to AUXILIARY. The system is now set up to use the Back-up Transmitter for that channel.

Pacemaker Patient

MAIN	NAME/RM/ID	ALARMS	TRENDS	REPORT	VIEW	EVENTS	DISCLOSURE	
DISCHARGE	SIZE	1	ALARM ON	1	6	11	16	SETUP RETURN
RELEARN	START	0 AM	ARRHY ON	2	7	12	17	
FILTER	INT	0	PACER	3	8	13	18	
PRIMARY	CHART	0	LONG RECORD	4	9	14	19	
		0	REMOTE REC	5	10	15	20	

The SETUP Screen is displayed. Note the PACER Key. The system defaults to patients without pacemakers and the PACER Key is displayed as not being recessed. If a patient is admitted with a pacemaker, touch the PACER Key. The key becomes recessed. This will insure a more reliable heart rate count. Touch the FILTER button to the left of the screen. The button will change to MONITOR. This should enhance the pacer spike on the display.


NOTE

Do not monitor a non-pacer patient in the pacer mode. This could result in inaccurate heart rate count.

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Record-All-Long & Short-Remote

Touch patient name.

MAIN	NAME/RM/ID	ALARMS	TRENDS	REPORT	VIEW	EVENTS	DISCLOSURE
DISCHARGE	SIZE	1	ALARM ON	1	6	11	16
RELEARN	START	0 AM	ARRHY ON	2	7	12	17
FILTER	INT	0	PACER	3	8	13	18
PRIMARY	CHART	0	LONG RECORD	4	9	14	19
			REMOTE REC 	5	10	15	20

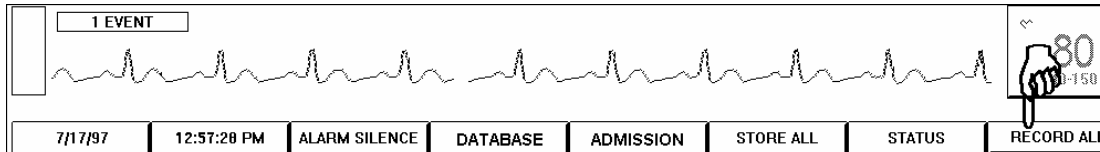
SETUP
R E T U R N

The Setup Screen is displayed. The Remote Record Control may be turned on or off for each individual patient. The default is Remote Record Disabled and the REMOTE REC Key is not recessed. Touch the REMOTE REC Key to activate remote recording. To deactivate, touch the REMOTE REC Key. The key returns to non-recessed position. This prevents remote activation of the recorder.

Long and Short Record

In the LONG RECORD mode, the recorder will only record arrhythmia alarm events which have a duration longer than 6 seconds. In the SHORT RECORD mode, the recorder is activated by any arrhythmia alarm event including ABNORMAL alarms. The LONG RECORD mode is used to prevent running of paper for repeat alarms. To select SHORT RECORD mode, touch the LONG RECORD Key. The key label changes to SHORT RECORD and the key displays as recessed.

All Record



To record a rhythm strip on all patients, make sure that the ECG waveforms are free of artifact. At the MAIN Screen, Touch the ALL RECORD Button as shown above. The system will record a 20 second strip for all patients. The length of the strip is determined by the settings in the REPORT configuration screen.

Manual Record

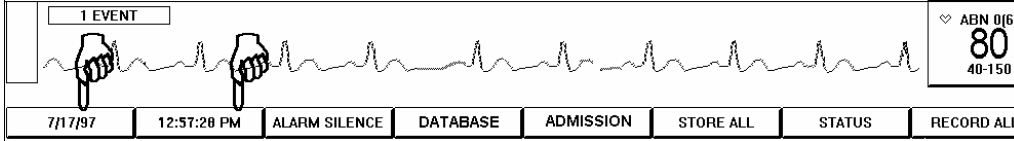
To manually record an ECG strip, touch the Heart Rate Button. Touch again to stop the recorder. Right click on Heart Rate Button for continuous record.

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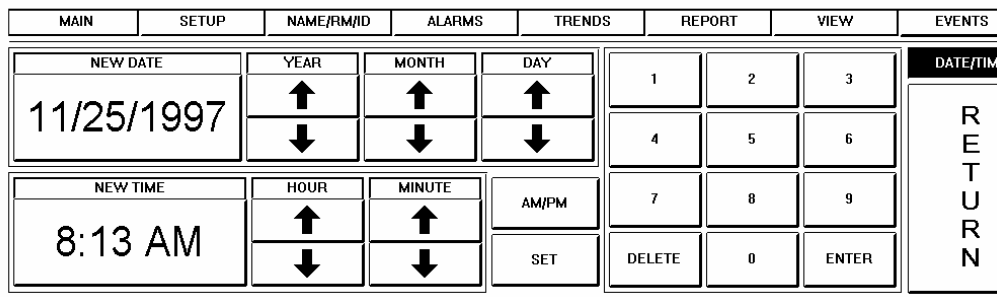
Section 4

Settings

Date and Time Settings



At the MAIN Screen, click on the DATE or the TIME button.



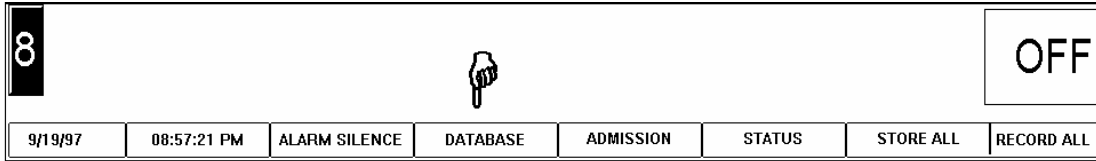
Use the UP and DOWN ARROW Keys for YEAR, MONTH and DAY to increase or decrease the displayed date on the NEW DATE Key. When the displayed date on the NEW DATE Key is correct touch the SET Key to complete the date setting.

Use the UP and DOWN ARROW Keys for HOUR and MINUTE to increase or decrease the displayed time on the NEW TIME Key. When the displayed time on the NEW TIME Key is correct, touch the SET Key to complete the time setting.

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Entering Patients Into Database

NOTE: Ensure all settings in the Rehab Configuration Screens have been made before entering the original patient database.



To enter patients into the Rehab Database, Touch DATABASE control at the bottom center of the screen. The Database screen will appear.

USE 'NEW' TO START A NEW ENTRY OR ARROWS TO SELECT ENTRIES.							
EDIT LOG	RHB REPORTS	NEW	ADD/SAVE	DELETE	GROUP	INACTIVE	ARCHIVE
FIRST: <input type="text" value="ROGER"/>	SSN: 456-789-012	TREADMILL TIME: 2	SPD: 1.0	ELEV: 1.0	<div style="border: 1px solid black; padding: 5px; display: inline-block;">DATABASE</div> <div style="border: 1px solid black; padding: 5px; display: inline-block; writing-mode: vertical-rl; transform: rotate(180deg);">RETURN</div>		
LAST: CALDWELL	DOB: 02/19/64	ARM EXERCISE TIME: 2	WATS: 0.0	RPM: 0.0			
STREET: 1 MAIN STREET	AGE: 64	ROWING TIME: 2	LEV: 0.0				
CITY: ANYWHERE	MD: DR. JONES	BICYCLE TIME: 2	LEV: 0.0	RPM: 0.0			
STATE: TN	HT: 6'	WEIGHTS: TIME: 2	WGHT: 0.0				
ZIP: 34567	WT: 200	AIRDYNE: TIME: 2	WATS: 0.0				
PHONE: (931)455-9016	SEX: M	TRACK: TIME: 2	RPM: 0.0				
GROUP: 1 MWF 08:00 AM	ID#						
CHANNEL: 1	DIAG:						
COLOR: 1 <input type="checkbox"/>	MEDS:						
THR: 120	PLAN1:						
TLR: 80	PLAN2:						
INSURANCE: BCT Blue Cross of T	GOAL:						
<input type="text" value="SELECT INSURANCE"/>	OUTCOME:						

To add new patients to the database touch the **NEW** control. This will present a new database screen with all entries blank. Type in the patient first name and ENTER, the cursor box will move to the patient last name. Continue entering data until all information is entered.

NOTE: Ensure that a last name is entered for all patients.

When entering the number for GROUP and COLOR enter the number desired and hit ENTER. The group information will be displayed. If the days and time are not correct move the cursor back to group, with arrows or mouse, and enter the desired group number. Use the same technique for the color of the waveform desired.

NOTE: To use the patient resting heart rate to determine the high target enter a number less than 40. If the number entered is 20, the system will determine the target by adding the resting rate and the 20 entered. Any number over 40 will be the target rate used.

When all information is entered touch the **ADD/SAVE** control. This saves the information in the database.

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Entering Insurance Information

To enter insurance information into the Rehab Database, Touch DATABASE control at the bottom center of the screen. The Database screen will appear.

USE 'NEW' TO START A NEW ENTRY OR ARROWS TO SELECT ENTRIES.						
EDIT LOG	RHB REPORTS	NEW	ADD/SAVE	DELETE	GROUP	INDIVIDUAL
FIRST: ROGER	SSN: 456-78-9012	TREADMILL: TIME: 2	SPD: 1.0	ELEV: 1.0	<div style="display: flex; align-items: center; justify-content: center;"> <div style="border: 1px solid black; padding: 5px; margin-right: 5px;">DATABASE</div> <div style="writing-mode: vertical-rl; text-orientation: mixed; font-weight: bold; padding: 5px;">RETURN</div> </div>	
LAST: CALDWELL	DOB: 02/02/34	ARM ERG: TIME: 2	WATS: 0.0	RPM: 0.0		
STREET: 1 MAIN STREET	AGE: 64	ROWING: TIME: 2	LEV: 0.0	RPM: 0.0		
CITY: ANYWHERE	MD: DR. JONES	BICYCLE: TIME: 2	LEV: 0.0	RPM: 0.0		
STATE: TN	HT: 6'	WEIGHTS: TIME: 2	WGHT: 0.0	RPM: 0.0	<div style="display: flex; align-items: center; justify-content: center;"> <div style="margin-right: 5px;">↑</div> <div style="margin-right: 5px;">↑</div> <div style="margin-right: 5px;">↓</div> <div style="margin-right: 5px;">↓</div> </div>	
ZIP: 34567	WT: 200	AIRDYNE: TIME: 2	WATS: 0.0	RPM: 0.0		
PHONE: (931)455-9016	SEX: M	TRACK: TIME: 2	RPM: 0.0	RPM: 0.0		
GROUP: 1 MWF 08:00 AM	DIAG:					
CHANNEL: 1	MEDS:					
COLOR: 1 <input type="checkbox"/>	PLANT:					
THR: 120						
TLR: 80						
INSURANCE: BCT						
ACCT #:						

Place the cursor at the Insurance box. Type in the three letter Insurance code. If the insurance has not been entered three questions will appear.

Touch the small control to the right of the insurance box. The Insurance selection screen will appear. If the insurance company desired is not listed touch EDIT LIST. If the patients insurance is already listed touch OK. If the list of companies covers the entire page use the UP and DOWN to scroll the list. If the control was touched by mistake touch CANCEL.

<p style="margin: 0;">Insurance Providers</p> <table style="width: 100%; border-collapse: collapse;"> <tr><td style="width: 15px;">BCT</td><td>Blue Cross of Tennessee</td></tr> <tr><td>FVT</td><td>Private Pay</td></tr> <tr><td>MED</td><td>Medicare</td></tr> </table>	BCT	Blue Cross of Tennessee	FVT	Private Pay	MED	Medicare	<p style="text-align: center; margin: 0;">New</p> <hr style="border: 0; border-top: 1px solid black;"/> <p style="text-align: center; margin: 0;">Delete</p> <hr style="border: 0; border-top: 1px solid black;"/> <p style="text-align: center; margin: 0;">Sort By Code</p> <hr style="border: 0; border-top: 1px solid black;"/> <p style="text-align: center; margin: 0;">Sort By Name</p> <hr style="border: 0; border-top: 1px solid black;"/>	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%;">Code</td> <td style="width: 15%; border-bottom: 1px solid black;"></td> <td style="width: 15%;">Acct#</td> <td style="width: 15%; border-bottom: 1px solid black;"></td> </tr> <tr> <td>Name</td> <td colspan="3" style="border-bottom: 1px solid black;"></td> </tr> <tr> <td>Address</td> <td colspan="3" style="border-bottom: 1px solid black;"></td> </tr> <tr> <td>City</td> <td style="border-bottom: 1px solid black;"></td> <td>State</td> <td style="border-bottom: 1px solid black;"></td> </tr> <tr> <td></td> <td style="border-bottom: 1px solid black;"></td> <td>Zip</td> <td style="border-bottom: 1px solid black;"></td> </tr> </table>	Code		Acct#		Name				Address				City		State				Zip	
BCT	Blue Cross of Tennessee																											
FVT	Private Pay																											
MED	Medicare																											
Code		Acct#																										
Name																												
Address																												
City		State																										
		Zip																										

CLOSE

If data needs to be changed touch the name of the insurance company and change the information displayed.


To add a new company, touch **NEW**. Position the cursor over the box to be added and type in new data.

When all information is entered touch the **CLOSE** control. This saves the information in the database.

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Entering Order of Exercise

To begin monitoring patients on the system, touch **ADMISSION** control at the bottom of the main screen.

8							OFF
9/19/97	08:57:21 PM	ALARM SILENCE	DATABASE	ADMISSION	STATUS	STORE ALL	RECORD ALL

NAME	CH #	WT	O2	SYST	DIAST	GLU		TMW	TMR	AIRD	ARM	NU3	NU4	ROW	WTS	UBE	OTH	
DUCK, D (23)	2	175						1	2	3	4	5	6	7	8	9	10	▲
DUCK, D (21)	3	228						1	2	3	4	5	6	7	8	9	10	▲▲
DUCK, H (26)	1	216						1	2	3	4	5	6	7	8	9	10	▲▲▲
DUCK, L (9)	4	149						1	2	3	4	5	6	7	8	9	10	▲▲▲▲
MOUSE, M (6)	5	188						1	2	3	4	5	6	7	8	9	10	▲▲▲▲▲
																		▼
																		▼▼
																		▼▼▼
																		▼▼▼▼
																		▼▼▼▼▼

7/31/01	10:35:55 AM	ALARM SILENCE	DATABASE	ADMISSION	STORE ALL	STATUS
---------	-------------	---------------	----------	-----------	-----------	--------

The cursor can be moved around the screen with the mouse, keyboard arrows or by touching the box desired. When a patient is entered into the database the order of exercise is entered in the order of the device configuration screen. To change the order desired, place the cursor in the box under the device and on the patient line, that the patient will start the exercise session on. Enter a 1 in the box.

Move the cursor along the patient information row and enter the order of exercise until all desired devices are entered. If a device will not be used for this patient leave the column blank. **NOTE: If protocol dictates that a patient will use the same device more than once, all columns must be filled to allow the NEXT control to move past FINISHED.**

NOTE: The exercise devices must be entered in the order of exercise. If you try to enter 4 under the first column the system will change to number 1. This feature is incorporated in case a device is deleted, then the system will automatically realign the order of exercise.

NOTE: The devices in the configuration are saved when the patient is entered into the Database. If the device configuration is changed later, the devices will not appear correctly when monitoring. It is important to do the device configuration before you enter any patients.

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Configuring Device Comments

There is space provided for entering up to 10 comments into the Rehab Log with the use of the F2 key. To enter these comments into the system perform the following:

Touch **STATUS** key. Touch **SETTINGS** key. Touch **RHB COMMENTS**.

Predefined Rehab Comments Close

- Rare PVC's
- Patient within Target Limit
- Short of Breath
- Chest Pain
- Normal Sinus Rhythm
- Elevated Pressure**

Static

Click in the Predefined Rehab Comments box to select a line for entry. The line selected will turn blue. Next click inside the Static box. Type in the comment desired. Hit ENTER. Repeat for next comment.

Cover Sheet Comments

To enter permanent comments in the additional comment field, touch STATUS. Touch SETTINGS. Touch RHB COVER NOTES. Type in the comments desired these comments will be printed on every patient cover sheet.

COMMENTS	HR	GLU	SYS	DIA	MTS	RPE	SO2	%TR	LO2	DYS	TIME	DEVICE	REASON	COMMENTS
Enter Comments for Caldwell, Roger														

RHB LOG

R
E
T
U
R
N

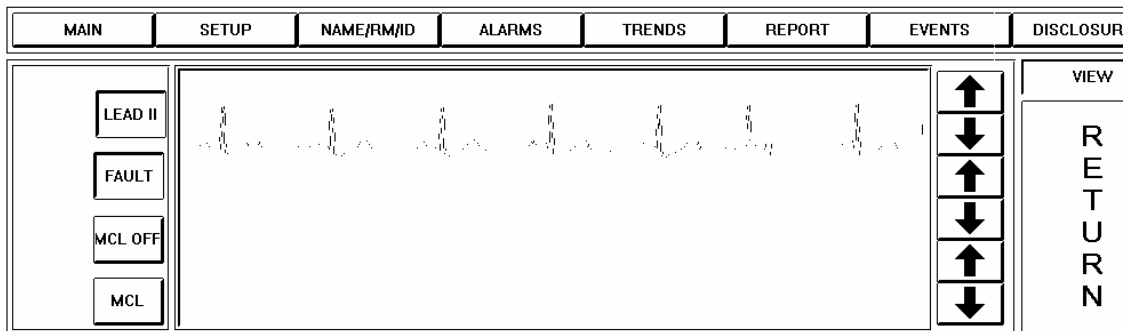
When all comments have been entered touch RETURN.

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Turn On Second ECG Waveform



Touch the area under the SETUP PATIENT column of the patient channel desired as shown above. Touch VIEW.



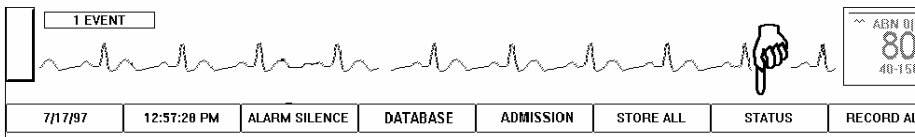
The button labeled MCL OFF indicates that the secondary lead (MCL) is not activated. To turn on MCL, touch the MCL OFF button. The button turns blue and MCL lead is displayed if the electrodes are attached. This function is controlled through the initial setup of the system.

The FAULT button determines whether a lead fault condition is reported on the main screen. With the FAULT on (button in blue) a lead fault message will appear on the main screen. With the button in white a lead fault will not be reported. If an electrode becomes detached and the lead fault is on, the lead fault message will indicate whether it is LEAD II or MCL lead. If the system designates LEAD FAULT II, check the WHITE and RED electrode. If the system designates LEAD FAULT MCL, check the BROWN and BLACK electrodes. If both waveforms are good, check the GREEN electrode. If the lead fault occurs on the Primary Lead, the system will switch automatically to the secondary lead. When the lead fault is corrected, the system will automatically switch back to the Selected Lead.

The bottom buttons are for selecting which lead is to be displayed on the main screen. In this situation LEAD II will be displayed. Touch MCL to make it the displayed lead.

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Data Backup



At the MAIN Screen, touch the STATUS Button as shown above.

<i>TRENSCenter General Status:</i>		GENERAL	STATUS
Version : 3.013	Free Global Heap : 1048576 Bytes	SETTINGS	R E T U R N
Revision : F	Storage Disk Size : 2146631680 Bytes	SOUND	
Build : Oct 17 1997 14:29:09	Disk Free Space : 1250983936 Bytes	HARDWARE	
System Startup : 10/24/97 02:44 PM	Processor : Intel Pentium or compatible	SERVICE	
Time Since Startup : 0 Days 0 Hours 5 Minutes	Number Processors: 1		
Active Clients : 0			

The STATUS Screen is displayed. Touch the SETTINGS Key.

<i>TRENSCenter Settings</i>			
25 MM	TOUCH OFF	RHB UNLOCK	RHB COVER NOTES
PRINTER ON	DISCHARGE RPTS	RHB COMMENTS	
FAX OFF	VOL UP	RHB EXPORT	
TREND 2D	VOL DOWN	RHB SAVE	

Touch RHB SAVE. The data is save to all locations selected in configuration.

Additional Settings

The 25 mm key is used to change the recorder (not printer) speed to 50 mm/s.

The PRINTER ON/OFF control turns off the printer if only a RECORDER is to be used.

The FAX OFF, DISCHARGE RPTS and RHB UNLOCK buttons are no longer used.

VOLUME UP/DOWN regulates audio volume.

The trends control selects trend information in two-dimensional or three-dimensional mode.

The TOUCH OFF control disables the touch screen (optional) for cleaning.

RHB COVER NOTES allows input to patient comments.

RHB COMMENTS allows input of predefined comments.

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Section 5 Configuration

Access Configuration Screens

To enter the configuration screens, discharge all patients. Touch **STATUS** key at bottom of the screen. Touch **SERVICE**. Touch 329 on the keypad. Touch **CONFIGURATION**.

Alarm Configuration

The Configuration screen is divided into several sections:

- Alarm Settings:** Includes checkboxes for Alarms Enabled, Short Record Enabled, Remote Record, and Low Battery Checking.
- Alarm Event Offset (Seconds):** Includes input fields for Asystole (6), VFib (4), VTACH (6), Rate (4), and Abnormal (4).
- Default Alarm Settings:** A table with columns for Type, Low, High, and Enable. The table lists various alarm types and their corresponding limits.
- Alarm Display Order (On Alarm Screen):** A list of alarm types with an Edit button.
- Alarm Suspend:** Includes checkboxes for Admit (10 seconds), Signal Loss (10 seconds), Disable Lead Fault, and Lead Fault (seconds). It also has a checkbox for Store Learn Event and an Alarm Strip Length field set to 20.

Type	Low	High	Enable
HEART RATE	40	180	<input checked="" type="checkbox"/>
NIBP SYST	90	200	<input checked="" type="checkbox"/>
NIBP DIAST	40	105	<input checked="" type="checkbox"/>
NIBP MEAN	50	110	<input type="checkbox"/>
IBP1 SYST	90	200	<input checked="" type="checkbox"/>
IBP1 DIAST	40	105	<input checked="" type="checkbox"/>
IBP1 MEAN	50	110	<input type="checkbox"/>
IBP2 SYST	5	40	<input checked="" type="checkbox"/>
IBP2 DIAST	5	40	<input checked="" type="checkbox"/>
IBP2 MEAN	5	40	<input type="checkbox"/>
RESP	5	35	<input checked="" type="checkbox"/>
TEMP	95	104	<input checked="" type="checkbox"/>
TEMP2	95	104	<input checked="" type="checkbox"/>
SP02	82	100	<input checked="" type="checkbox"/>

Alarms Enabled: Alarms on or off when new patient is admitted.

Short Record Enabled: If short record is on all alarms will record. If short record is off only episodes greater than 6 seconds will be recorded but the events will be stored.

Remote Record: Remote activation of the recorder from the transmitter.

Low Battery Checking: Turns the low battery checking on or off.

ALARM EVENT OFFSET (SECONDS)

Note: Factory adjustment only.

ALARM LIMITS

Default settings for all alarm limits. Enable turns the alarms on when patient is admitted.

ALARM DISPLAY ORDER (On Patient Alarm Setup Screen)

Allows user to add/delete and in specified order, only the alarm functions required relative to the patient connected device.

ALARM SUSPEND

[On admit suspend alarms for ___ seconds] turns off the alarms for the specified number of seconds. This prevents false alarms during hook up.

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[On Signal Loss suspend alarms for ___ seconds] turns off the alarms following a signal loss and lead fault for specified number of seconds to prevent false alarms.

[On Lead Fault suspend alarms for ___ seconds] turns off the alarms following a lead fault for specified number of seconds to prevent false alarms.

[Disable Lead Fault] causes indefinite suspension and will be indicated on the left side of the main screen as [FAULT OFF] unless overwritten by the [ALARMS OFF] indication, which includes disabling lead fault.

[Store Learn Event] turns on or off the storage of a learned event.

[Alarm Strip Length] specifies amount of ECG Strip printed on an alarm.

[Use printer for alarm recordings] utilizes a laser printer for alarm recordings. This could be used for a system without a strip chart recorder.

Clock Configuration

Alarm	Arrhy	Bedside	Clock	MISC	Printer	Protocol	Receiver	Reports	Room	Schedule	Service	System	Transmitter
-------	-------	---------	-------	------	---------	----------	----------	---------	------	----------	---------	--------	-------------

Date/Time Display

Date Format

MM/DD/YY MMM DD, YYYY

MM/DD/YYYY DDD, MMM DD, YYYY

MMM DD YY DD MMM, YYYY

Time Format

HH:MM (24 Hour) HH:MM a (12 Hour)

HH:MM AM (12 Hour) HH:MM:SS (24 Hour)

HH:MM am (12 Hour) HH:MM:SS AM (12 Hr)

HH:MM A (12 Hour) HH:MM:SS am (12 Hr)

The clock configuration screen is used to select the proper display for the date and time.

Determine which format the customer desires and click on that display format.

Miscellaneous Configuration

Alarm	Arrhy	Bedside	Clock	MISC	Printer	Protocol	Receiver	Reports	Room	Schedule	Service	System	Transmitter
-------	-------	---------	-------	------	---------	----------	----------	---------	------	----------	---------	--------	-------------

Use 3-D Trends

Auto View Manual Freeze

The miscellaneous screen is used to set the trends to 3 dimensional or 2 dimensional. In the 2D node the trend are presented in a standard flat line display where as 3D presents the graphical data in the EXCEL format. This is for display only and does not affect the print out.

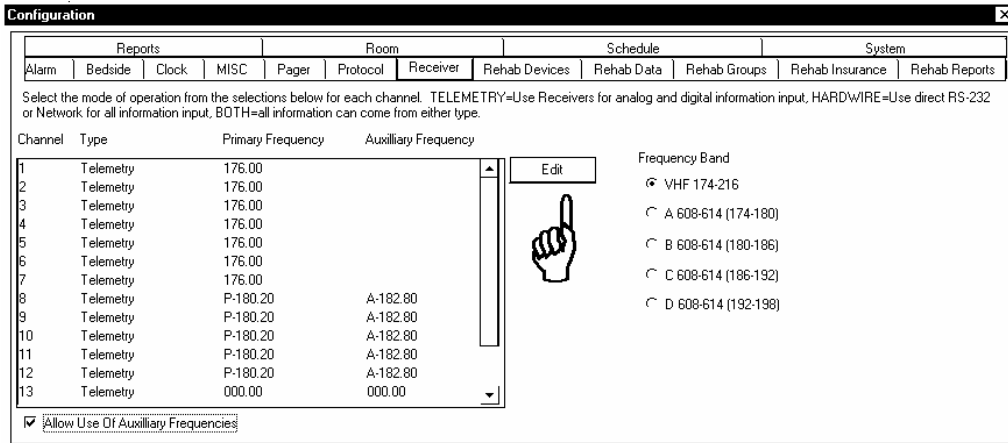
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The Auto View Manual Freeze tells the system whether or not you want the screen to show the frozen waveform at the bottom of the screen. The Auto View should not be checked in the **REHAB** mode.

If the box is not checked an event will be stored but the screen will not flip.

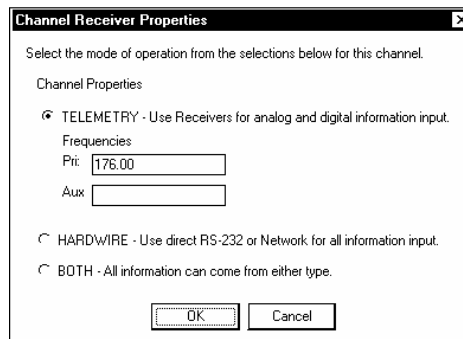
Receiver Configuration



TM8A (VHF) Click the VHF 174-216 Frequency Band. Click in the frequency windows for each channel. Back space out the existing frequencies and type in the new frequencies. The channel frequencies are the last three digits of the transmitter serial number, put a one in front of the three digits and a 0 after the three digits. For example TM8767 would be 767 plus a 1 = 1767 plus a 0 after = 176.70. This is the number to enter in the channel window.

TM8B (WMTS) Click the **B 608-614** Frequency Band. Click in the frequency windows for each channel. Back space out the existing frequencies and type in the new frequencies. The channel frequencies are the last five digits of the transmitter serial number

Click on **EDIT**.



Telemetry: if the system is only to be use with telemetry transmitters either dual lead or multi-parameter.

Hardwire: if the system is only going to be used with bedside monitors hardwired back to central.

Both: if the channels will be switched from telemetry and hardwire.

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Allow use of Auxiliary Frequencies: If the system is supplied with an auxiliary transmitters select the Allow use of the auxiliary frequencies. This will enable the Primary/Auxiliary switch on the system SETUP screen.

NOTE: It is important to set the hardwire/telemetry/both parameters properly to match system capabilities so accidental activation will be prevented.

Reports Configuration

The reports screen is used to tell the system what type reports are desired and on which device to print the reports.

The facility name is used as the header for all reports printed on a laser printer. Move the mouse cursor to the box and click. Type in the information.

Logo: Place the cursor inside the logo box and type in the path to the logo BMP file.

Report Printer. Click on the arrow to the right of the printer box and select the appropriate printer.

MANUAL RECORD.

If a laser printer is used click the box labeled SEND TO PRINTER. This tells the system to send the manual record information to the printer.

Pre, Post and Parallel annotation is not implemented at this time. In the future this will allow the customer to customize how the data is printed on the recorder.

Strip length tells the system how long to print on a manual record. The time interval is 5 to 40 seconds.

Record all length tells the system how long to print if record all is activated.

Live Delay sets the amount of delay to the Printer. The interval is 0 to 20 seconds. **NOTE: If the recorder is set for a timed strip, make sure the delay is set less than the record time or the event will never print. It would be necessary to use the full disclosure file to find the event.**

EVENT RECORD Same as manual record.

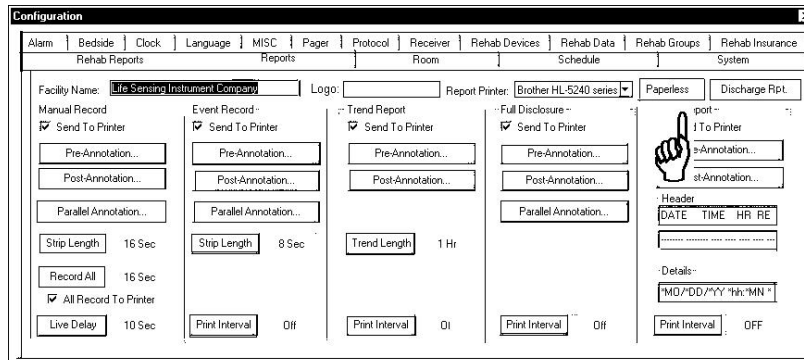
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Record Interval. Do not use in Rehab.

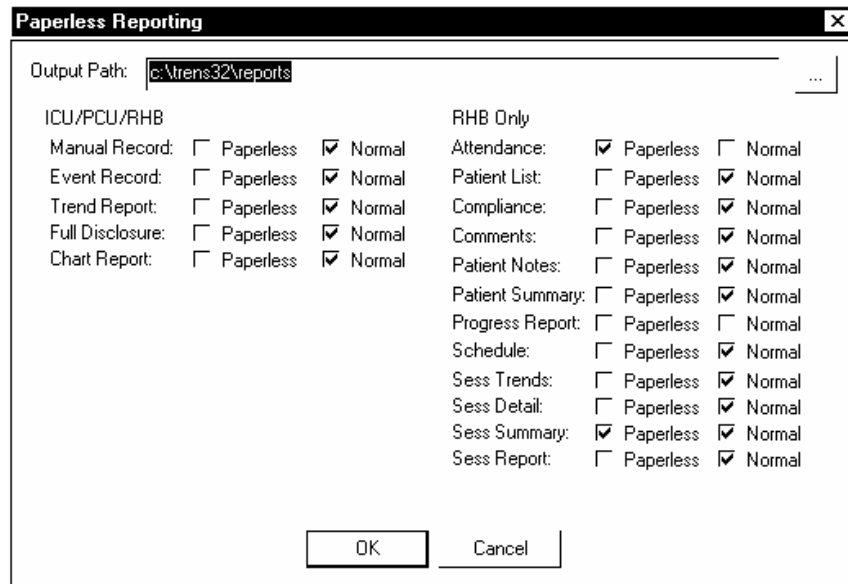
TREND REPORT, FULL DISCLOSURE AND CHART REPORT. Same as event record.

Reports Configuration (Paperless)

To configure the system to generate reports suitable for export to the hospital information system go to the configuration screen and click on **REPORTS** tab.



Click on **PAPERLESS**.



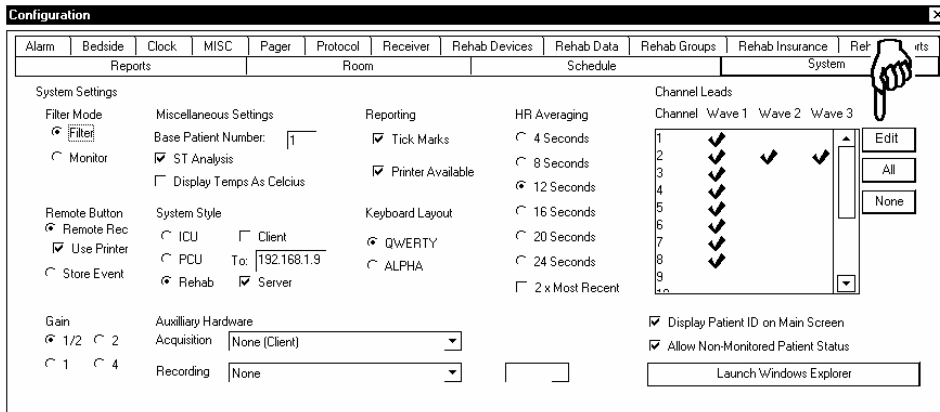
Click on each report to select Normal or Paperless. Both options may be selected. The paperless report will be stored in the location specified in the OUTPUT PATH.

Discharge Rpt. is not utilized in the Rehab mode.

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System Configuration

The system configuration screen sets up the type of system; the number of leads viewed and miscellaneous system functions.



SYSTEM SETTINGS

Filter/Monitor sets the default setting when a new patient is admitted to the system. Filter is the normal default and reduces most artifacts from the waveform.

Gain sets the default size of the waveform.

MISCELLANEOUS SETTINGS

Base patient number sets the number to be used for channel 1. All channels following will be in sequential order. This is used where multiple systems are installed.

ST analysis can be defaulted on or off. On when ticked.

DISPLAY TEMPS AS CELCIUS

Some bedside monitors only transmit temperature in Celsius. If the Nurses want to see Fahrenheit values do not click this box.

SYSTEM STYLE should always be in REHAB.

System style also sets up the central station to be used as a client or host in a network application by clicking the appropriate box and entering the TCP/IP address. If the system is a standalone unit leave all entries blank. **See networking section of manual.**

Keyboard layout sets the default from an alphabetical or computer keyboard.

HEART RATE AVERAGING

The HR Averaging sets up the system heart rate counting. In PCU/ICU set the system up for 4 or 8 seconds. This will give faster response to sudden changes in Heart Rate.

ALLOW CHART EDITING enables the editing function for PATIENT REPORT in ICU/PCU modes only. The equivalent document in REHAB is the PATIENT RHB LOG, which by default is editable.

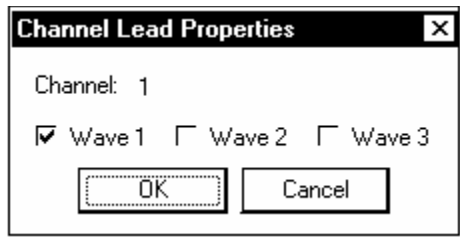
STRIP CHART SETTINGS

Tick Marks places the marks on the recorder paper every 3 seconds.

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CHANNEL LEADS - Click on a channel number. Click on **EDIT**.



This tells the system which waveforms to process. Click the appropriate waves for the device. The TM8 transmitter is only Wave1 and Wave2.

Printer Available sets the system up to use the laser printer.

Auxiliary Hardwire is set for the central to be used as a client in a network environment. Click on none for E101's and the system will obtain the ECG information from the network.

Display Patient ID on screen, when unchecked, will remove the patient ID number from the main screen.

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Click on the Rehab Device tab.

Devices (All have Time)	Level	Watts	RPM	Speed	Elev	Wght	Time	METS		Create New Device
<input type="checkbox"/>									Rx	Edit Delete
<input type="checkbox"/>									Rx	Edit Delete
<input type="checkbox"/>									Rx	Edit Delete
<input type="checkbox"/>									Rx	Edit Delete
<input type="checkbox"/>									Rx	Edit Delete
<input type="checkbox"/>									Rx	Edit Delete
<input type="checkbox"/>									Rx	Edit Delete
<input type="checkbox"/>									Rx	Edit Delete
<input type="checkbox"/>									Rx	Edit Delete
<input type="checkbox"/>									Rx	Edit Delete
<input type="checkbox"/>									Rx	Edit Delete
<input type="checkbox"/>									Rx	Edit Delete
<input type="checkbox"/>									Rx	Edit Delete

Click on Create New Device. The following screen will appear.

Device Name:

Parameters

	Default Value
<input type="checkbox"/> Time	<input type="text"/>
<input type="checkbox"/> Level	<input type="text"/>
<input type="checkbox"/> Watts	<input type="text"/>
<input type="checkbox"/> RPM	<input type="text"/>
<input type="checkbox"/> Speed	<input type="text"/>
<input type="checkbox"/> Elevation	<input type="text"/>
<input type="checkbox"/> Weight	<input type="text"/>

METS

Formula

You may select one of the standard formulas below and click on the Select button to use that formula for this device. Leave the METS expression empty if you desire manual entry.

(((3.5*[Sw/2.2])+([WA*6.12]*3))/[Sw/2.2])/3.5

(((3.5+[Sw/2.2])+([WA*6.12]*2))/[Sw/2.2])/3.5

(((18*[WA])+1.59*[Sw/2.2])/1.59*[Sw/2.2])

(((300*[LV])+1.59*[Sw/2.205])/1.59*[Sw/2.205])

(3.5+([1*[SP*26.8])+([1.8*[SP*26.8]*[EL/100])])/3.5

Type in device name. Click on the METS formula to use then click on SELECT. Click in the Time box and enter time, if desired. Click on the appropriate parameters for that device and enter the default value. There are two items available for each device. Click on SAVE.

NOTE: It is very important to select the appropriate parameter for workloads. If a device uses WATTS for calculation, do not check Speed.

Continue until all devices have been entered.

To change an existing device click on EDIT and follow instructions.

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METS CALCULATIONS (Metabolic Equivalency Test)

Treadmill formula is $(3.5 + (.1 * (SP * 26.8)) + (1.8 * (SP * 26.8) * (EL / 100))) / 3.5$

Airdyne formula is $((300 * LV) + (1.59 * (SW / 2.2))) / (1.59 * (SW / 2.2))$

Bicycle formula is $((3.5 * (SW / 2.2)) + ((WA * 6.12) * 2)) / (SW / 2.2) / 3.5$

Arm Ergometer formula is $((3.5 * (SW / 2.2)) + ((WA * 6.12) * 2)) / (SW / 2.2) / 3.5$

6 Minute Walk formula $((SP / 528) * 1 + 3.5) / 3.5$

Use speed for input. Input # of feet walked.

NUSTEP 4000 $((5.77 * (SW / 2.205)) + (5.87 * WA) - 150) / ((SW / 2.205) * 3.5)$

Use Watts for input.

NUSTEP 3000 $((3.5 + (SW / 2.205)) + (((RM * (LV * .25)) * 6.12) * 2)) / (SW / 2.205) / 3.5$

Use RPM for steps per minute and Level for workload.

For other devices, use the WATTS formula.

Place the cursor on the formula desired and click. Move the cursor to the double arrows associated with the device and click. The formula will be displayed in the METS formula box.

You must decide which weight to use for the METS calculations. If the rehab weighs the people each session, use SW in the formula. If they only weigh occasionally use WT. The WT is the weight entered in the Database. The SW is the session weight. Change to the METS formula to the appropriate weight.

Abbreviations Used:

SW=Session Weight

WT=Database Weight

SP=Speed

EL=Elevation

LV=Level

RM=Revolutions per Minute

WA=Watts

NOTE: If the manufacturer of the device doesn't provide a METS formula contact them to obtain a valid formula. It is not possible for us to determine the formula.

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Rehab Data Configuration

Click on the REHAB DATA tab. The Rehab Data screen configures all of the data presentations for the TrensCenter.

Name Display Format allows the name to be displayed in any of the 6 formats presented. First Name, Last Name, Last Name-First Initial, First Name-Last Initial, First Name-Last Name and Last Name-First Name.

TRG Low and TRG High are the default settings when a new patient is admitted to the database.

Rehab Log Report information configures where the log report goes and the format of the report. Check the box Send to Printer for Laser printer operations.

STG Warning is the time left before the end of the exercise device. This alerts the operator when the seconds selected are left.

Display on Patient Information Screen permits customization of the Database screen. If certain items are not used by the Rehab uncheck the box and that item will not appear on the screen.

Events to Store information is used to tell the system what information to store in the archive areas.

Post Test Properties information tells the system when to store the posttest ECG strip. The right box is set for percent or Beats per Minute and the left box enters the numeric amount. If the Auto Discharge after Storing is checked the system will obtain a rhythm strip at the prescribed interval and discharge the patient.

Session Report Options allows selection of option pages to be printed at end of session.

Rehab Timers can be set to count up.

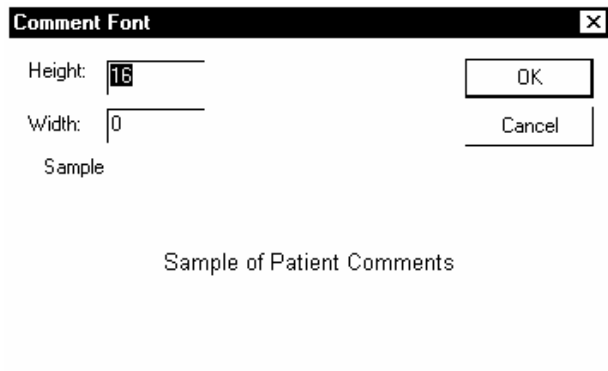
Weight Alarm: Set the number of sessions to average and the number pounds for the weight alarm.

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Suppress Patient Name on Admit Screen. Takes patient name off ADMISSION SCREEN when admitted.

Admission Device Report, when checked, will print a schedule of devices for the patient when admitted.

Comment Font Size. Sets the size of the Comment Font on the large comment box.

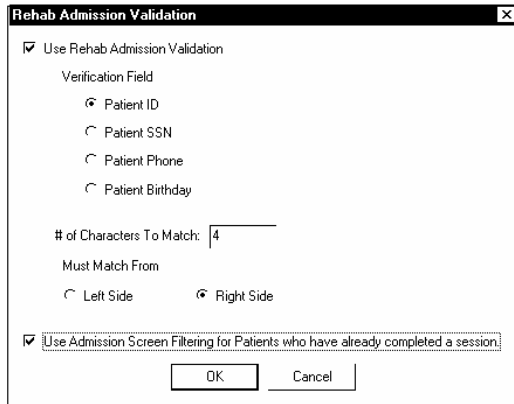


Set the font size to the desired level. The larger the number, the larger the type.

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Admission Validation Configuration

Admission validation prevents patients with the same last name and first initial being admitted. Click on **ADMISSION VALIDATION SETTINGS**.



The screenshot shows a dialog box titled "Rehab Admission Validation". It contains the following elements:

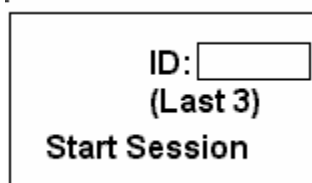
- A checked checkbox labeled "Use Rehab Admission Validation".
- A section titled "Verification Field" with four radio button options: "Patient ID" (selected), "Patient SSN", "Patient Phone", and "Patient Birthday".
- A text input field labeled "# of Characters To Match:" with the value "4".
- A section titled "Must Match From" with two radio button options: "Left Side" and "Right Side" (selected).
- A checked checkbox at the bottom labeled "Use Admission Screen Filtering for Patients who have already completed a session!".
- "OK" and "Cancel" buttons at the bottom.

The top control turns on the Admission Validation control.

The verification field is user selectable for ID, SSN, Phone or birthday.

The number of characters to use sets the level of security. Three or four characters should be enough to differentiate between patients with similar names.

When a patient is admitted to the system, the patient ID must be entered correctly before a session can be started.



The screenshot shows a rectangular box containing:

- The text "ID:" followed by a small rectangular input field.
- The text "(Last 3)" below the input field.
- The text "Start Session" in a larger, bold font below the previous text.

If the Admission screen filtering option is checked, patients who have completed a session for the day will be removed from the admission screen. This prevents accidental re-admission and loss of data.

If the admission filtering is turned on a new button is displayed on the admission screen. The button is labeled **REMAINING**. This will only display the patients that have not completed a session for the day. Touch the **REMAINING** button and it changes to **ALL PATIENTS** so all patients may be accessed.

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Rehab Groups Configuration

The screenshot shows the 'Configuration' window with the 'Rehab Groups' tab selected. It displays a grid of 30 groups, each with a name, meeting days, and time. Group 1 is highlighted, and its properties are shown in a separate window on the right.

Group	Meeting Days	Meeting Time
Group 1	MWF 08:00 AM	08:00 AM
Group 2	MWF 09:00 AM	09:00 AM
Group 3	MWF 10:00 AM	10:00 AM
Group 4	MWF 11:00 AM	11:00 AM
Group 5	MWF 01:00 PM	01:00 PM
Group 6	MWF 02:00 PM	02:00 PM
Group 7	MWF 03:00 PM	03:00 PM
Group 8	MWF 04:00 PM	04:00 PM
Group 9	TuTh 08:00 AM	08:00 AM
Group 10	TuTh 09:00 AM	09:00 AM
Group 11	TuTh 10:00 AM	10:00 AM
Group 12	TuTh 11:00 AM	11:00 AM
Group 13	TuTh 01:00 PM	01:00 PM
Group 14	TuTh 02:00 PM	02:00 PM
Group 15	TuTh 03:00 PM	03:00 PM
Group 16	TuTh 04:00 PM	04:00 PM
Group 17	* Unused *	
Group 18	* Unused *	
Group 19	* Unused *	
Group 20	* Unused *	
Group 21	* Unused *	
Group 22	* Unused *	
Group 23	* Unused *	
Group 24	* Unused *	
Group 25	* Unused *	
Group 26	* Unused *	
Group 27	* Unused *	
Group 28	* Unused *	
Group 29	* Unused *	
Group 30	* Unused *	

Group 1 Properties:

- Group is Used
- Meeting Days:**
 - Sunday
 - Monday
 - Tuesday
 - Wednesday
 - Thursday
 - Friday
 - Saturday
- Meeting Time:**
 - Time: 08:00 AM
 - Hour: [08] | Minute: [00]
 - Buttons: Earlier, Later
 - Minute options: :00, :15, :30, :45

The Rehab Groups screen is used to establish the days of the week and the starting times of that group.

Click on Group 1 box. Click on the appropriate Meeting Days. Click on the hour and either earlier or later to set the proper time.

If the Sessions do not start on the top of the hour click on the desire Minute box.

NOTE: It is very important that patients are placed in a group even if they do not exercise as a group. If patients are not in a group the SCHEDULE, COMPLIANCE and ATTENDANCE reports will not function properly.

Rehab Reports Configuration

The screenshot shows the 'Reports' configuration window with various report options checked. The 'Rehab Reports' tab is selected.

Report Type	Options
Print on Patient Summary Report	<input checked="" type="checkbox"/> First Name <input checked="" type="checkbox"/> Last Name <input type="checkbox"/> Street Address <input type="checkbox"/> City <input type="checkbox"/> State <input type="checkbox"/> Zip Code <input type="checkbox"/> Phone <input type="checkbox"/> Group <input type="checkbox"/> Channel <input type="checkbox"/> Color <input type="checkbox"/> THR <input type="checkbox"/> Insurance <input type="checkbox"/> Ins Acct No <input type="checkbox"/> Ptn ID <input type="checkbox"/> SSN <input type="checkbox"/> DOB <input type="checkbox"/> Age <input type="checkbox"/> Height <input type="checkbox"/> Weight <input type="checkbox"/> Sex <input type="checkbox"/> Diagnosis <input type="checkbox"/> MEDS <input type="checkbox"/> Plan 1 <input type="checkbox"/> Plan 2 <input type="checkbox"/> Goal <input type="checkbox"/> Outcome
Print on Schedule Report	<input checked="" type="checkbox"/> First Name <input checked="" type="checkbox"/> Last Name <input checked="" type="checkbox"/> Phone <input type="checkbox"/> Devices <input checked="" type="checkbox"/> Channel <input type="checkbox"/> Sig Line <input type="checkbox"/> Dbl Spc <input type="checkbox"/> THR <input type="checkbox"/> TLR <input type="checkbox"/> Insurance <input type="checkbox"/> MD <input type="checkbox"/> Daily Cutoff: 8:00 AM
Trends To Print	<input checked="" type="checkbox"/> Heart Rate <input checked="" type="checkbox"/> BP Resting <input checked="" type="checkbox"/> BP Max <input checked="" type="checkbox"/> SPO2 <input checked="" type="checkbox"/> METS <input checked="" type="checkbox"/> RPE <input checked="" type="checkbox"/> % THR <input type="checkbox"/> GLU <input checked="" type="checkbox"/> WEIGHT <input checked="" type="checkbox"/> MINUTES <input checked="" type="checkbox"/> DYSPNEA <input type="checkbox"/> LO2
Print on Detail Report	<input checked="" type="checkbox"/> HR Resting <input checked="" type="checkbox"/> HR Max <input checked="" type="checkbox"/> BP Resting <input checked="" type="checkbox"/> SYST Max <input checked="" type="checkbox"/> DIAST Max <input checked="" type="checkbox"/> BP Post <input checked="" type="checkbox"/> GLU Rest <input type="checkbox"/> GLU Post <input checked="" type="checkbox"/> Mets <input checked="" type="checkbox"/> RPE <input checked="" type="checkbox"/> SPO2 <input checked="" type="checkbox"/> %THR <input type="checkbox"/> LO2 <input type="checkbox"/> D'YSP <input checked="" type="checkbox"/> Mins <input type="checkbox"/> Device <input checked="" type="checkbox"/> Reason <input checked="" type="checkbox"/> Comments <input checked="" type="checkbox"/> Sess Wgt
Print on Summary Report	<input checked="" type="checkbox"/> HR Resting <input checked="" type="checkbox"/> HR Max <input checked="" type="checkbox"/> BP Resting <input checked="" type="checkbox"/> SYST Max <input checked="" type="checkbox"/> DIAST Max <input checked="" type="checkbox"/> BP Post <input checked="" type="checkbox"/> GLU Rest <input type="checkbox"/> GLU Post <input checked="" type="checkbox"/> Mets <input checked="" type="checkbox"/> RPE <input checked="" type="checkbox"/> SPO2 <input checked="" type="checkbox"/> %THR <input type="checkbox"/> LO2 <input type="checkbox"/> D'YSP <input checked="" type="checkbox"/> Mins <input checked="" type="checkbox"/> Sess Wgt
System	<input type="checkbox"/> Cover Sheet Properties <input type="checkbox"/> Data Export Properties <input type="checkbox"/> Progress Rpt Properties

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The Rehab Reports Screen is used to configure the reports printed from the Rehab Reports section of the TrensCenter. Most of the reports have options for detail or summary. This screen allows customization of these reports.

The leftmost section sets up the appearance of the Patient List Summary Report. If Patient List report is requested by detail, all data entered into the database will be printed. By configuring the summary report certain pieces of information that is not required could be eliminated.

The Print on Schedule Report is the most requested report by all rehabs. The list can be used as a sign-in report for proof of attendance by checking the Sig Line and Double Space along with the patient name. Some rehabs use the report for setup of workloads. Check Devices for this option. NOTE: There are only 120 characters across the paper. Do not try to print all of the above items they will not fit on the standard sheet of paper.

The daily cutoff time is set up so the user can print today or tomorrow's schedule. If a print request is before the cutoff time, today's schedule will print. If on or after, tomorrow's report will print.

Check trends desired.

Print on Detail and Summary reports determines the data to be printed on SESSION reports.

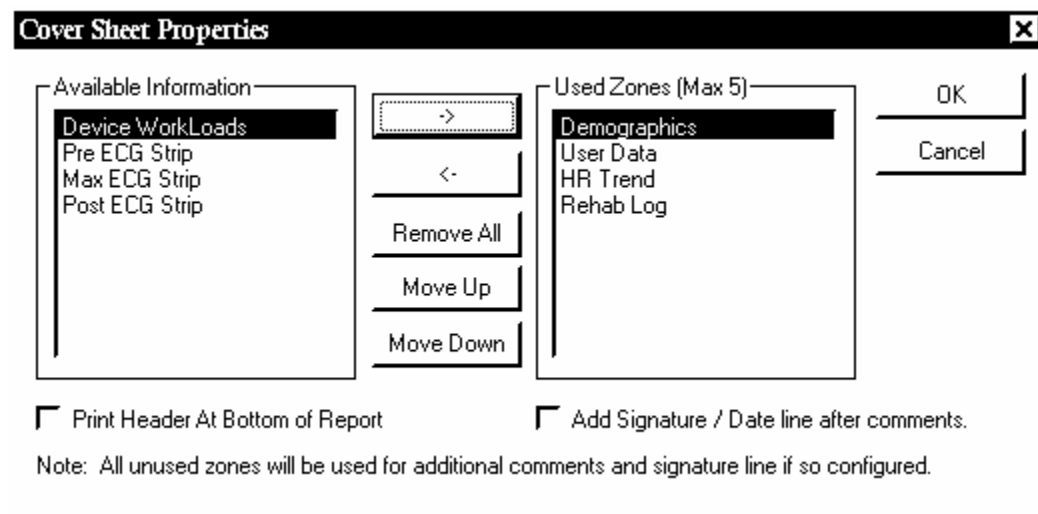
Cover Sheet Properties configures the Cover Sheet for the Daily Session Report.

DATA EXPORT to be added later.

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Cover Sheet Configuration

Click on Cover Sheet PROPERTIES to activate.



The Cover Sheet Properties are used to configure the cover sheet. The left box above contains all of the available sections that can be printed. The right box indicates is what will be printed and the order they will be printed.

To configure the cover sheet left Click on the information in the left box that is desired. Left Click on the right Arrow >. The information selected moves to the right window or Used Zones. Continue moving information to the Used Zone window.

If the information is not in the correct order Left Click on the information line and left click on MOVE UP or MOVE DOWN until the information is in the desired order.

The header with the patient information is always printed at the top of the cover sheet. If it is necessary to print the header at the bottom of the cover sheet left click on Print Header at bottom of Report.

To add a signature/date line at the bottom of the report left click on Add Signature/Date line after comments box.

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Progress Report Configuration

Click on Progress Report Properties to activate.

The screenshot shows the "Progress Report Properties" dialog box. It is divided into several sections:

- Available Information:** A list containing "Demographics", "User Data", "Pre ECG Strip", and "Post ECG Strip". To the right are buttons for ">", "<", "Remove All", "Move Up", and "Move Down".
- Used Zones (Max 5):** A list containing "Narrative Statement", "Trends", "Session Summary", and "Max ECG Strip". To the right are "OK" and "Cancel" buttons.
- Default Number of Sessions for "LAST" Selector:** A text input field containing the number "10".
- Trend Items (Max=3):** Five checkboxes for "HR", "NIBP", "SpO2", "METS", and "MINUTES". Below each checkbox is a "Properties" button.
- Statement Narrative:** A large text input field with a "Help" button to its right.
- Report Header:** A "Configure" button, a checkbox for "Print At Bottom of Report", and a checked checkbox for "Add Signature / Date line after comments."

Note: All unused zones will be used for additional comments and signature line if so configured.

The top portion of the Progress Report is manipulated the same as the cover sheet properties. Click on the Available Information desired and click on the right arrow to move to the Used Zones window. Use Move Up and Move Down to position the items in desired sequence. There are 5 zones available. The remainder of the page will be used for additional comments.

NOTE: The additional comments will be the comments from the last session. The user should input the comments they want on the last session.

The default number of sessions selects how many sessions to include in the report. This is the default number. This number of sessions may be changed during the report process.

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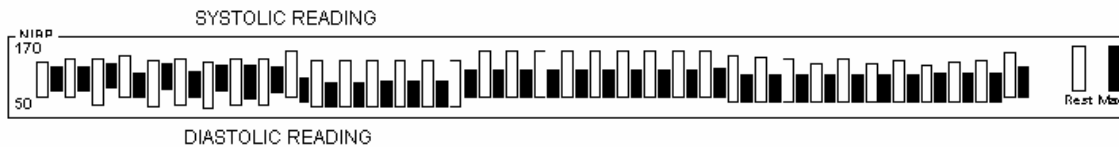
Progress Report Configuration, Trends

Select the trends desired by clicking inside the appropriate check box. (3 maximum) Click on Properties for each trend.

<div style="border: 1px solid black; padding: 5px;"> HR Trend Properties ✕ <input checked="" type="checkbox"/> Trend Resting Value OK <input checked="" type="checkbox"/> Trend Maximum Value Cancel <input type="checkbox"/> Minimum Trend Range: <input style="width: 50px;" type="text" value="50"/> Note: Use a range value of -1 to auto-scale the trend. Maximum Trend Range: <input style="width: 50px;" type="text" value="150"/> </div>	<div style="border: 1px solid black; padding: 5px;"> NIBP Trend Properties ✕ <input checked="" type="checkbox"/> Trend Resting Value OK <input checked="" type="checkbox"/> Trend Maximum Value Cancel <input checked="" type="checkbox"/> Floating Trend Bars Minimum Trend Range: <input style="width: 50px;" type="text" value="-1"/> Note: Use a range value of -1 to auto-scale the trend. Maximum Trend Range: <input style="width: 50px;" type="text" value="-1"/> </div>
---	--

The Heart Rate trend has the capability of trending both resting and maximum values. Select the trend desired. The system will automatically determine the grid scale if a -1 is inserted in the minimum and maximum grid values. The grid scale will be 5 units above and below the minimum and maximum rates detected.

The Blood Pressure trend has the capability of trending both resting and maximum values. Select the trend desired. The NIBP also has the capability of displaying floating trends. This mode will depict both systolic and diastolic on the same grid mark.



<div style="border: 1px solid black; padding: 5px;"> SpO2 Trend Properties ✕ <input checked="" type="checkbox"/> Trend Resting Value OK <input checked="" type="checkbox"/> Trend Maximum Value Cancel <input type="checkbox"/> Minimum Trend Range: <input style="width: 50px;" type="text" value="90"/> Note: Use a range value of -1 to auto-scale the trend. Maximum Trend Range: <input style="width: 50px;" type="text" value="100"/> </div>	<div style="border: 1px solid black; padding: 5px;"> METS Trend Properties ✕ <input checked="" type="checkbox"/> Trend Avg OK <input checked="" type="checkbox"/> Trend Maximum Value Cancel <input type="checkbox"/> Minimum Trend Range: <input style="width: 50px;" type="text" value="-1"/> Note: Use a range value of -1 to auto-scale the trend. Maximum Trend Range: <input style="width: 50px;" type="text" value="-1"/> </div>
---	--

The SpO2 trend has the capability of trending both resting and maximum values. Select the trend desired. For the maximum trend resolution select 90 and 100 as trend ranges,

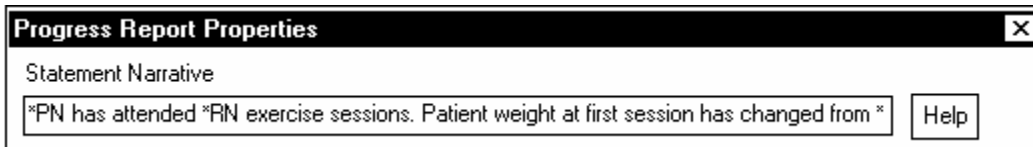
The METS trend has the capability of trending both Average and Maximum METS. Select the trend desired.

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Progress Report Configuration, Narrative Statement

The Progress Report manager has the capability of automatically printing a narrative statement concerning changes to patient condition. To configure Narrative Statement place cursor in Narrative window. Type in the statement that is desired. To insert data from Rehab Record type *(data). A list of available data follows.

NOTE: The data acronym must be in all capital letters.



Demographics

PN Name	PF First Name	PL Last Name
PA Street	PC City	PS State
PZ Zip	PP Phone #	ID Patient ID
IP Insurance Provider	IA Account #	PH Schedule (Group)
PG Gender (M/F)	PO Age (how OLD)	SS Social Security #
PT Height	PD Physician	PB Birth date
P1 User field 1	P2 User field 2	P3 User field 3
P4 User field 4	P5 User field 5	P6 User field 6
RN Last Session #	RT Last session date	TR Target heart rate
SD Report Date	ST Report Time	PAG ... Page Number
RN Last Session #	RT Last session date	
	Vital Signs	
FW First Weight	RW Most recent weight	FR First Rest HR
RR Last Rest HR	FM First MAX HR	RM Last MAX HR
FP First POST HR	RP Last POST HR	FO First Spo2
RO Last SpO2	FS First Rest systolic	FD First Rest diastolic
RS Last Rest systolic	RD Last Rest diastolic	
FMS ... First MAX systolic	FMD ... First MAX diastolic	
RMS ... Last MAX systolic	RMD ... Last MAX diastolic	
FPS First POST systolic	FPD First POST diastolic	
RPS Last POST systolic	RPD ... Last POST diastolic	
FMT First METS	RMT ... Last METS	
FRE First RPE	RRE ... Last RPE	

Example: *PN has completed *RN exercise sessions. Patient weight at first session was *PW, present weight is *RW. The Heart Rate has changed from *FR to *RR. The blood pressure has changed from *FS/*FD to *RS/*RD.

The printed statement would be “ John Doe has completed 36 exercise sessions. Patient weight at first session was 250, present weight is 240. The Heart Rate has changed from 67 to 92. The blood pressure has changed from 140/89 to 130/80.

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Progress Report Configuration, Header

Click on Report Header **CONFIGURE**.

Statement Narrative

Report Header Add Signature / Date line after comments.

Print At Bottom of Report

Note: All unused zones will be used for additional comments and signature line if so configured.

The following window is displayed.

Progress Report Header Configuration

HEART HEALTH CENTER

*PL *PF AGE: *PO DOB: *PB

*SS Progress Report HT: *PT WT: *PW

*ID Last 10 Sessions TARGET: *RT

*PD *SD *ST SESSION *RS

Preview Help OK Cancel

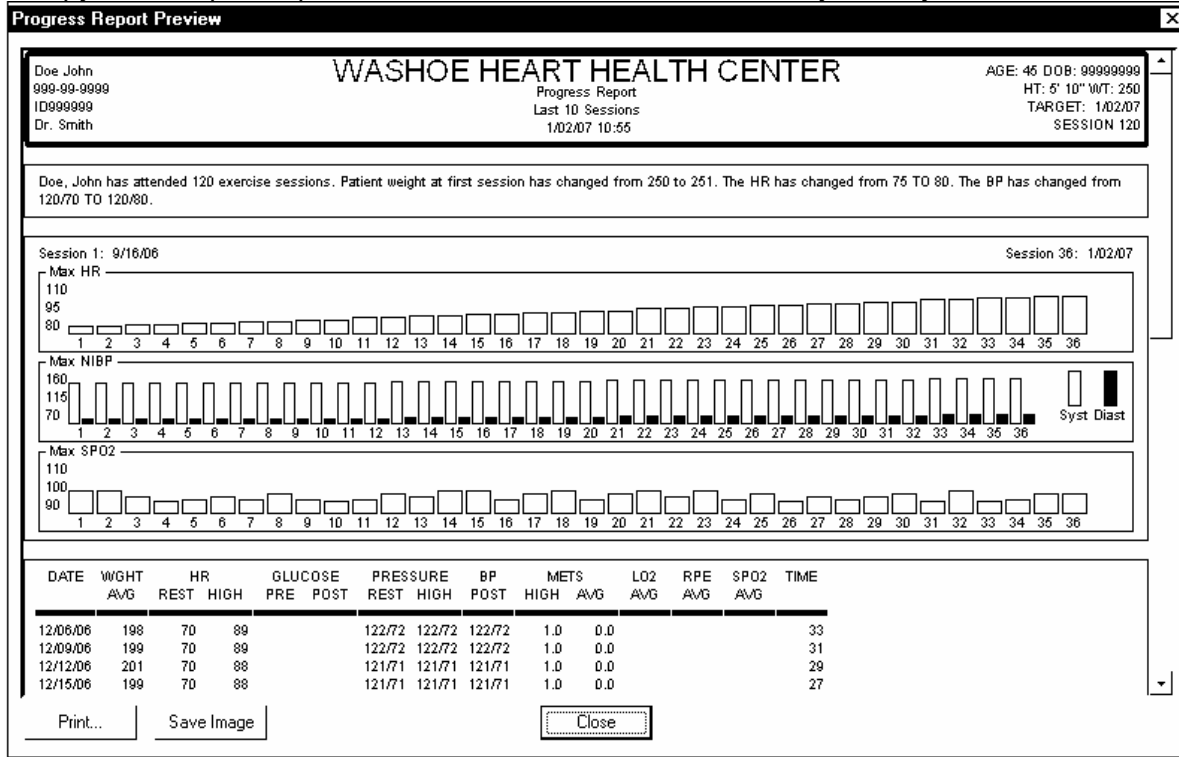
The header is the information that is printed at the top of the report. The header is configured in the same manner as the narrative statement. In the above example the patient first name and last name is printed in the top left hand corner. If a title is desired type in the title, as above, Progress Report..

Click on preview

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Progress Report Configuration, Preview

A copy of the report is presented on screen. Check for accuracy and layout.



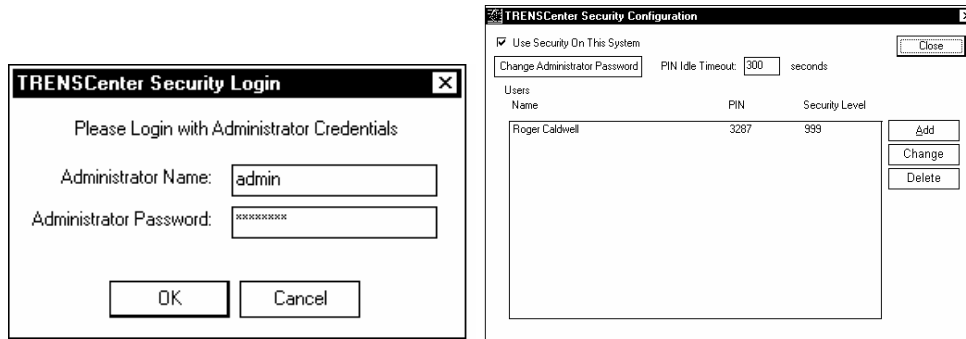
Click on **PRINT** to print a copy of the report. Click on **SAVE IMAGE** to save a copy of report.

Close out all screens and return to TrensCenter.

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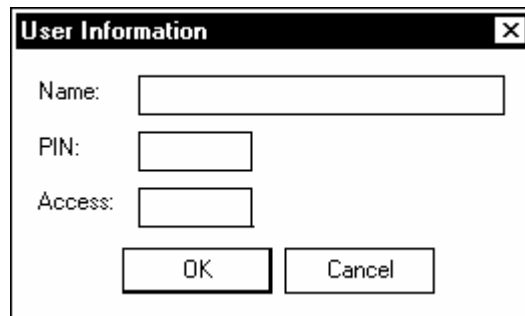
Secure Log In (HIPPA)

Exit TrensCenter. Click on Start button. Click on RUN. Type in **C:\trens32\tcsecure.exe**. The following page will be displayed. The default password for TCSECURE is "admin" and "password". The administrator should change these even if they don't intend to use security, otherwise a malicious user could get in with the default values and lock access to their system.



Once you are logged in check the box to indicate whether security is used or not. If security is not used click on Close.

If security is used, one user must be set up. Click on **Add**.



Each PIN must be unique and ZERO is not a valid PIN. Recommend all PINS be between 0001 and 9999. The supervisor should set up a PIN number with an Access number of at least 99. If the user's security level is greater than 99 the user can see the PIN numbers when accessing the status log. Currently that is the only use of the security level. Repeat procedure for all users.

The PIN Timeout feature can be set to ZERO to disable timeout. Any other value (up to 9999) will cause that many seconds to elapse before automatically logging the user out. When auto-logout occurs the TrensCenter flips back to the main screen if it happens to be on one of the secondary screens.

If a user is logged in on a TrensCenter, a green "unlocked" icon will appear in the upper left corner of the main screen and just to the left of the screen label on the secondary screens (just above the RETURN button). A red "locked" icon will appear any other time.

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If Timeout is enabled, when the amount of time left before auto-logout is less than 30 seconds the number of seconds left is displayed just underneath the lock icon. Any activity on the mouse or keyboard will reset that timer to its maximum value.

To login on a security enabled TrensCenter, simply begin typing the desired PIN. The "Login" dialog will pop up and accept input. Hitting the "Enter" key on the keyboard or selecting the "Login" button on the dialog will attempt to log that user in. If the entered PIN is not found in the database a red error message will display in the dialog.

To logout, simply press the F12 key once.

When logged in, each activity that is logged in the status log will have the PIN of the individual logged with it.

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Changing User Defined Fields

Hit Function keys F9 F9 F8 F8 F9. This will terminate the TrensCenter Program.

Click on the START in lower left corner of display or hit the Windows Logo key on lower left of keyboard.

Type R. This will bring up the dialog box.

Type TC.INI Use no spaces. Hit ENTER or click on OK.

The TC.INI file will be opened.

Hit Function Key F3 for search.

Type **USER**. Hit ENTER.

Click on Cancel inside the search box.

There are six entries available to be user specified. These are:

REM Rehab User 1=	REM Rehab User 2=
REM Rehab User 3=	REM Rehab User 4=
REM Rehab User 5=	REM Rehab User 6=
REM Rehab User 7=	

The default titles are 1 DIAG. 2 MEDS. 3 PLAN1. 4 PLAN2. 5 GOAL. 6 OUTCOME. 7 ID

To change any of these, place the cursor in front of the line to be changed. Touch the DELETE key four times to remove the REM. Move the cursor to the end of the line after =, and type in the desired header.

The proper syntax is Rehab User 3=RISK FACTOR. The third label will be changed from PLAN1 to RISK FACTOR.

When all of the changes have been made.

Click on file (Upper left of window). Click on save.

Click on file. Click on Exit.

Click on TrensCenter Icon to restart the TrensCenter.

Touch DATABASE. The changes you specified should be displayed. If not repeat procedure and check to make sure the entry is in the [Rehab] field and punctuation is correct.

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Changing Column Headers on Rehab Log Screen

To change the User Defined Rehab Log headers to enter things other than what is offered.

To change LO2 to PAIN do the following;

Run TC.INI. Arrow down to the [TEXT] section.

Add the following two lines;

RPT COL LO2ADMIN=PAIN (Type in whatever is desired.)

RHB ADMISSION LO2 COL=PAIN

Save and Exit.

Below is a listing of all column headers and associated reports.

REPORT HEADERS

RPT COL WEIGHT=	RPT COL DATE=	RPT COL TIME=
RPT COL AVERAGE=	RPT COL HIGH=	RPT COL REST=
RPT COL MAX=	RPT COL SPO2=	RPT COL NIBPSYST=
RPT COL NIBPDIAS=	RPT COL O2SAT=	RPT COL TEMP=
RPT COL RESP=	RPT COL ABNORMALS=	RPT COL METS=
RPT COL RPE=	RPT COL PTHR=	RPT COL PRE=
RPT COL POST=	RPT COL GLUCOSE=	RPT COL RESTINGNIBP=
RPT COL MAXNIBP=	RPT COL PTARGETHR=	RPT COL MINUTES=
RPT COL DYSPNEA=	RPT COL LO2ADMIN=	

Rehab Log Headers

RHB ADMISSION HR COL=	RHB ADMISSION GLU COL=
RHB ADMISSION SYS COL=	RHB ADMISSION DIA COL=
RHB ADMISSION MTS COL=	RHB ADMISSION RPE COL=
RHB ADMISSION SO2 COL=	RHB ADMISSION %TR COL=
RHB ADMISSION LO2 COL=RHB ADMISSION DYS COL=	
RHB ADMISSION TIME COL=	RHB ADMISSION DEVICE COL=
RHB ADMISSION REASON COL=	RHB ADMISSION COMMENTS COL=
RHB ADMISSION NAME COL=	RHB ADMISSION CH # COL=
RHB ADMISSION WT COL=	RHB ADMISSION O2 COL=
RHB ADMISSION SYST COL=	RHB ADMISSION DIAS COL=
RHB ADMISSION 1 COL=	RHB ADMISSION 1 COL=
RHB ADMISSION 2 COL=	RHB ADMISSION 3 COL=
RHB ADMISSION 4 COL=	RHB ADMISSION 5 COL=
RHB ADMISSION 6 COL=	

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SERVICE SCREEN

				1	2	3	GENERAL		
CH1	180.50	CH5	180.50	TOUCH CAL	CONFIGURATION				
CH2	180.50	CH6	180.50	PRIMARY	STATUS LOG	4	5	6	SETTINGS
CH3	180.50	CH7	180.50	AUXILIARY	REC QUEUE	7	8	9	SOUND
CH4	180.50	CH8	180.50	CALIBRATE	RESTORE	DELETE	0	ENTER	HARDWARE
								SERVICE	

The service screen is used for service functions.

Touch 329 on the keypad to activate the other functions. To access the configuration screen all patients must be discharged.

FREQUENCIES

To change primary frequencies, touch PRIMARY then touch the channel to change. Use the keypad to enter new frequency. Touch ENTER to change to the new frequency,

To change auxiliary frequencies touch AUXILIARY then touch the channel to change. Follow above instructions for primary.

TOUCH CAL is not implemented at this time. See section on touch screen calibration for information.

Printer queue shows the number of records waiting to be printed.

RESTORE takes the data that was stored during the SAVE function and restores it back into the patient database.

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Antenna System Layout

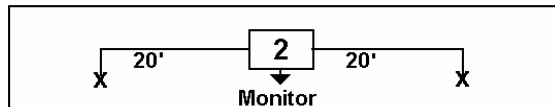
LEGEND

2	3800-58 2 WAY SPLITTER
4	3800-02 4 WAY SPLITTER
A	1100-08 INLINE AMPLIFIER
	6000-72 RG59 75 OHM COAX
X	1200-10 TL1800 ANTENNA
	2100-76 CRIMP F CONNECTOR
X	1200-12 TL6025 UHF Antenna

2 Antenna system with:

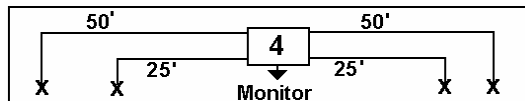
1 ea. 2 Way Splitter

6 ea. F Connectors



2 ea. Antenna

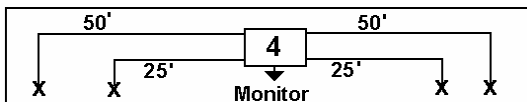
40' Coax cable plus distance to central station.



4 Antenna system with:

1 ea. 4 Way Splitter

10 ea. F Connectors



4 ea. Antenna

150' Coax cable plus distance to central station.

8 Antenna system with:

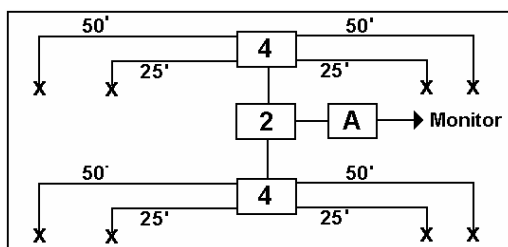
1 ea. 2 Way Splitter

8 ea. Antenna

300' Coax cable plus the distance from splitter to central station.

2 ea. 4 Way Splitter

24 ea. F Connectors



CAUTION

DO NOT OVER AMPLIFY THE ANTENNA SYSTEM SINCE CROSS MODULATION MAY OCCUR.

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Antenna System Layout

The ideal situation in an antenna system design is for the RF signal to arrive at the receiver input at 0 gain.

For every 2-way splitter used a 3db loss of the RF signal occurs. There is a 6db loss for a 4-way splitter. Loss due to impedance of the 75 ohm coaxial cable is 6.5db/100' for RG6A and 10db/100' for RG59.

Count the number of 2 way and 4 way splitters in the antenna leg, plus the length of the cable. Multiply by the amount of loss above for each component of the system.

In the above example the top leg of the system has approximate loss of 6db from the 4-way splitter, 3db from the 2-way splitter and approximately 3db for each antenna, from the coaxial cable. Assume the distance to the central station is 200 feet using RG6A, the cable loss would be 13db. The total system loss would be $6+3+3+13=25$ db. The RF receiver box contains a 20db amplifier. This would result in the RF signal reaching the receiver input at -5 db. This would probably work fine. If an amplifier is added, use a small one of no more than 10db. If it is adjustable, set to half gain.

In large antenna systems the loss must be regained in various locations in the system, not at one location. Never try to regain more than 20 db at one location. When loss on any given section reaches 20db, the signal should be regained by that amount.

When an antenna system is amplified, remember that the noise in the system is also amplified. Do not use more than is needed. Stay un-amplified if possible.

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Post Installation System Check Out

1. Turn on system.
2. Install all patient lead wires into the transmitters observing proper color placement.
3. Install two "AAA" batteries in all transmitters observing proper polarity + end up.
4. Verify proper frequencies are installed by checking frequency on back of transmitter against the frequency on service screen. Adjust if necessary.
5. Admit all patients to the system.
6. Connect Channel 1 transmitter to a simulator or person. Observe the ECG tracing on TrensCenter screen. If simulated, the trace should be approximately 1 CM high and free of all artifact. If on person, trace should be free of artifact.
7. Remove Red or White electrode from transmitter. Lead Fault message should appear. Replace lead.
8. Unscrew cap from transmitter. Signal Loss message should appear. Tighten cap.
9. Walk around area of antenna coverage. Observe full disclosure to assure no drop out of ECG trace.
10. Touch Print for that channel. ECG strip should print.
11. Repeat step 6 through 10 for remaining transmitters.

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TM8 (A)(B)(C) DUAL LEAD TRANSMITTER



Tested to Comply with FCC Standards

TM8A FCC ID: OF8-TM8A
TM8B FCC ID: OF8-TM8B
TM8C FCC ID: OF8-TM8B

LIFE SENSING INSTRUMENT COMPANY, Inc.
329 WEST LINCOLN STREET
TULLAHOMA, TENNESSEE 37388
(931- 455-9016)

declares that the device manufactured as TeleMaster, model no. TM8A does conform to the regulations as outlined in Title 47 of the US code of federal regulations, Part 15 covering Class B personal computers and peripherals, and model no. TM8B does conform to the regulations as outlined in Title 47 of the US code of federal regulations, Part 95, subpart H covering Wireless Medical Telemetry Service (WMTS).

Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference, and
- (2) This device must accept any interference received, including interference that may cause undesired operation.

NOTE: This equipment has been tested and found to comply with the limits for a class B digital device, pursuant to Parts 15 and 95 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio or television communications. However, there is no guarantee that the interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

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TM8 (A)(B)(C) DUAL LEAD TRANSMITTER (Cont.)

- Reorient or relocate the receiving antenna of the interfered device. Increase the separation between the equipment and interfered device.
- Connect the equipment to a different outlet on a circuit other than the one the interfered device is connected to.
- Consult the dealer or an experienced radio/TV technician for help.

**IMPORTANT - Operation of a TM8B requires prior coordination with the ASHE frequency coordination designator. For further guidance visit the ASHE website at:
www.wmtssearch.com**

CAUTION: Changes or modifications not expressly approved by the manufacturer can void the user's authority to operate the equipment. It is the responsibility of the equipment user to maintain compliance with the FCC rules. To ensure compliance, use only those cables and/or accessories prescribed by the manufacturer.

IMPORTANT: To comply with the FCC RF exposure requirements, users should avoid grasping the transmitter for any extended period of time while the device is in operation.

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Warranty Information---Limited Warranty

Life Sensing Instrument Company (LSI) manufactures medical telemetry monitoring systems from parts that are new or equivalent to new in accordance with industry-standard practices. LSI warrants that the parts used in the manufacture of their products will be free from defects in material and workmanship. The warranty begins on the date of invoice.

Customer/End User must return completed Warranty Card, included, to LSI to activate warranty.

This warranty does not cover damage to parts due to external causes, including accident, abuse, misuse, problems with electrical power, usage not in accordance with product instructions, and problems caused by use of parts and components not authorized by LSI.

LSI will replace or repair parts qualifying under this warranty with new or reconditioned parts. The decision to repair or replace parts will be at the discretion of LSI. The decision to use new or reconditioned parts will be at the discretion of LSI.

Parts returned to LSI must be authorized by Return Material Authorization (RMA) process. LSI will issue the RMA number to be attached to the returned part or parts. LSI owns all parts that are replaced or repaired under this warranty.

The use or installation of unauthorized system components or software will result in voiding this warranty.

Parts provided on an exchange basis will be shipped using UPS ground or equivalent method. Any expedited shipping charges will be charged to the end-user.

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End User License Agreement

End user License Agreement for Life Sensing Instrument Company (LSI) for HTS820TC Central Station; HTS820TCIII Central Station; HTS820 TrensStation patient check-in station.

Important—Read Carefully: This LSI End User License Agreement (EULA) is a legal agreement between you (either an individual or a single entity) and LSI Software Products identified above, which includes computer software and associated media and printed materials, and may include online or electronic documentation. By installing, copying, or otherwise using the SOFTWARE PRODUCT, you agree to be bound by the terms of this EULA. If you do not agree to the terms of this EULA, promptly return the unused SOFTWARE PRODUCT to the place from which it was obtained.

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End User License Agreement

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Specifications

SIZE:

Display 7" Deep x 17" High x 20" Wide 12 lb.
Enclosure Telemetry 12" Deep x 7" High x 13.25 Wide 15.5 lb
CPU 19" Deep x 17" High x 8" Wide 32 lb.

Hardwire Specifications:

Pentium 1.8 GHz or faster	Wide Screen LCD Monitor
256 Megabytes Internal RAM Memory	2 Each 30-Gigabyte Hard Drive or Larger
AGP VGA Graphics Card	CD-R DRIVE
Lexar USB Backup Drive	10/100 Network Controller
1 COM Port	1 Parallel Port for Laser Printer
4 USB Ports	

WAVEFORM Display:

22 Inch Color High Resolution Monitor	16 Independent Traces 8 Seconds Full Screen
3.5 Seconds Half Screen Interactive Mode	

Alphanumeric Display:

Name, ID#, Channel#, Date and Time	Heart Rate, Timers, Device
HR Alarm Limits and Target Limits	All Status Information
All Alarm Information	

Heart Rate:

Large 1 -Inch Digital Display	0-250 BP +/- 1% Accuracy
HR Updated 4 Seconds	Alarm Limits 0-250 BPM

Gain:

Settings of 5mm/mv, 10mm/mv, 20mm/mv, 40mm/mv

Arrhythmia:

Automatic Learn Cycle	Alarms ABN. VTACH, VFIB, ST and ASYSTOLE
1Hour Graphical Trends of HR and Abn	Storage of All Events for Recall
2-Hour Full Disclosure	

Recordings:

Annotation of all information	Adjustable Delay of 0 to 40 Seconds
Automatic Each Device	Trend Recording
Full disclosure print out	Rehab Log

Alerts:

End of Device Time	High Target limit Exceeded
Lead Fault, Low Battery, Loss of Signal	

Specifications subject to change without notification.

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Document History

Version	Issue Date	Changes	Owner's Signature
4.000A	05-16-05	Version change consistent with software	<i>Eugene WMoney</i>
4.000B	02-22-06	Version change consistent with software	<i>Eugene WMoney</i>
C	07/13/06	Changed document revision to comply to document naming procedure	<i>Eugene WMoney</i>
5.000A	11/01/07	Version change consistent with software	<i>Eugene WMoney</i>
5.000B	11/01/08	Version change consistent with software	<i>Eugene WMoney</i>
5.000C	05/10/09	Version change consistent with software	<i>Eugene WMoney</i>
5.000D	01/20/10	Version change consistent with software See p. 26,40,45	<i>Eugene WMoney</i>