

- a. Set up KWR-37 crypto
    - (1) Turn POWER ON/OFF switch ON (if necessary; should not be turned off)
    - (2) Depress CIPHER TEXT button
    - (3) Set AUDIBLE ALARM to ENABLE position
    - (4) Observe MARK and SPACE indicator lights flashing to indicate signal presence
    - (5) Turn POWER SUPPLY TESTS meter switch to INPUT to observe signal level
      - (a) Needle should fluctuate near one-third mark on scale
  - b. Patch timing signal of KWR-37 to KG-14 using SB-3195 patch panel
    - (1) Set assigned KG-14 rotary switch to assigned KWR-37 position
  - c. Set up KG-14 crypto
    - (1) Turn POWER ON/OFF switch to ON
      - (a) Yellow RECEIVE light glows steadily
      - (b) SYNC light and tone come on
    - (2) Depress SET UP button
      - (a) ALARM light comes on with steady red glow
      - (b) SYNC light goes off and tone stops
    - (3) Ensure that METER CONTROL switch is at INPUT; observe dial fluctuations
      - (a) Needle should fluctuate near one-third mark
  - d. Connect crypto equipment to assigned teletypes using SB-1210 patch panel
    - (1) Locate set jacks for TTY's and loop jacks for assigned KWR-37 and KG-14 on patch panel
- WARNING --- (2) Patch SET to LOOP
- (3) Adjust LOOP current on assigned channel to 60ma
- e. Energize UGC-25's (simulation)
    - (1) Turn ON/OFF switches to ON

## 5. Nation Bureau of Standards Time and Frequency Standard

a. Purpose: To provide an accurate time signal to synchronize November HF crypto equipment

(1) International call signs WWV (Washington) and WWVH (Hawaii)

b. Time Standard Set up

(1) Connect antenna to assigned R-1051 HF receiver using SRA-12 electrical filter assembly

(a) Locate receptacle on SRA-12 front panel for assigned R-1051 receiver

(b) Locate lowest available output jacks on filter assembly corresponding to assigned frequency

(c) Make patch

(2) Tune R-1051 receiver

(a) Set MODE SELECTOR switch to AM

(b) Dial in assigned frequency

(c) Set CPS switch to 000 to lock-in frequency

(d) Rotate RF GAIN control fully clockwise

(e) Set USB LINE LEVEL switch to +20db

(f) Plug headset into USB phone jack to monitor signal

(3) Patch R-1051 receiver to assigned J-939 remote jack using SB-973

(4) Plug headset into remote jack

## E. System Operation

## 1. Synchronizing the KWR-37 Using WWV Time Standard

a. Five-minute interval synchronization

(1) Set inner clock dial to next possible five-minute start time

(a) Set outer clock dial for hour change if necessary

(2) Ensure CIPHER TEXT indicator is on

(3) Depress SET UP button

(4) Depress START button as tone for five-minute interval is heard on WWV

(a) Observe that HIGH SPEED and KEY lights are now on

(b) NORMAL light goes on when HIGH SPEED light goes out and beeping sound is heard

(c) Beeping sound will stop and SYNC light will come on when KWR-37 is in sync

1. If KWR-37 goes to ORDER WIRE, depress CIPHER TEXT button to retain synchronization

2. If beeping sound goes to a steady tone and SYNC light does not come on, repeat procedure

b. Late Starts

- (1) Ensure KWR-37 is still in CIPHER TEXT and that MARK and SPACE lights are flashing
- (2) Set inner clock dial to the last completed five-minute interval
- (3) Depress SET UP button
- (4) Depress START button as the tone for the minute is heard
  - (a) Observe that HIGH SPEED and KEY lights are now on
    1. 11 seconds in high speed = 1 hour catch-up
- (5) When NORMAL light comes on, turn TIME DIFFERENCE switch to 15-second position
- (6) Depress SEARCH button three times for each minute past the five-minute interval
- (7) Return TIME DIFFERENCE switch to AUTO
  - (a) If SYNC light does not come on and beeping sound goes to a steady tone, repeat procedure

## 2. Synchronizing the KG-14

- a. After synchronizing KWR-37, depress START button on KG-14
  - (1) ALARM light goes off and steady tone is heard
  - (2) When steady tone changes to intermittent, alarm light comes on
  - (3) SYNC light begins to flash intermittently during search
  - (4) When synchronized, SYNC and ALARM light illuminate with steady glow, and tone stops

## F. Securing Equipment

### 1. Securing the Time Standard

- a. J-939
  - (1) Remove headphones
- b. SB-973
  - (1) Turn appropriate knob(s) to OFF
- c. R-1051
  - (1) Turn all MCS/KCS frequency knobs to 0
  - (2) Turn MODE SELECTOR switch to STBY
- d. SRA-12
  - (1) Remove appropriate RF patch cord