D. Basic Circuit Operation

1. Circuit requires synchronization prior to transmission

   a. Synchronization acquired by a phasing signal

      (1) Phasing: A signal between transmitting and receiving KW-7 cryptographic equipments

         (a) KW-7 will be discussed in detail in communication equipment lessons

      (2) Sending and receiving KW-7 equipments must be synchronized

      (3) KWX-8 is used as a remote phasing unit for KW-7 (See Figure 8.4-3)

         (a) Ready light (green): ON when connected to energized KW-7

         (b) Alarm light (red): If comes on, cease transmitting and notify Watch Supervisor

         (c) Phase Indicator (P&I) light (yellow): ON when phasing signal is being sent

         (d) Send button: Used to start or drop phase
b. Depress KWX-8 send button once to start phase
   (1) P&I light will come on

c. Depress KWX-8 send button once to drop phase
   (1) P&I light will go out in approximately six seconds

d. Hold LETTER and REPEAT key down on keyboard at same time phase
   is dropped.
   (1) Hold 3-5 seconds after P&I light goes out
   (2) Prevents circuit from losing synchronization

e. Start each transmission with five spaces, two carriage returns
   and one line feed

f. End each transmission with two carriage returns and one line
   feed

2. Simplex Circuits

a. All stations transmit and receive on the same frequency
   (1) Multiple stations must NOT transmit at the same time or trans-
       missions will be disrupted.
       (a) LISTEN BEFORE TRANSMITTING
           1. If circuit is busy, wait until the circuit is clear
       (b) Turn transmitter carrier on when circuit is clear
       (c) Transmit a ten (10) second phasing signal
       (d) Make transmission
       (e) Turn transmitter carrier off

3. Duplex Circuits

a. Each of TWO stations transmits on a different frequency and both
   stations may transmit at the same time

b. When used for full-period termination
   (1) Each station keeps its transmitter on the air at all times
       (a) Phasing signal is transmitted continuously during periods
           when no transmissions are being made

c. When used for Primary Ship/Shore or Task Group Orestes (TGO)
(1) NECOS keeps transmitter on air at all times on NECOS send frequency
   (a) Phasing signal is transmitted continuously during periods when no transmissions are being made
(2) Ships send frequency is shared by all units
   (a) Follow Simplex procedure for making transmissions

E. Message Transmission Procedures

1. The Call
   a. Serves to identify the stations to which that particular message or transmission is being directed
   b. Full Call
      (1) Identifies both the called and the calling station
          (a) Example: 0514Z NEDS DE NJFK K
      (2) Using Full Call
          (a) When establishing a net
          (b) To report into a previously established net
          (c) In initial call ups
          (d) When acknowledging receipt of a message
   c. Abbreviated Call
      (1) Call sign of the called station may be omitted
          (a) If call is part of an exchange of transmission between stations
          (b) If there is no question who is being called
             1. Example: 0516Z DE NJFK K
          (c) Will NOT be used when acknowledging receipt of a message or transmission
   d. Contents of Call
      (1) Individual call signs identifying a specific station
          (a) Example: NJFK: USS JOHN F KENNEDY
                       NEDS: USS BRADLEY

8-4-7