Figure 3-24.—Typical receive-only system.

low-level teletype equipment. A receive system is shown in figure 3-24.

The receiver system includes up to four AS-2815/SSR-1 antennas with an Amplifier Convertor AM/6534/SSR-1 (fig. 3-25). It also includes a Combiner-Demodulator MD-900/SSR-1 (fig. 3-26) and a Demultiplexer TD-1063/SSR-1 (fig. 3-27). The antenna and convertors are mounted above deck in positions that ensure that at least one antenna is always in view of the satellite. The combiner-demodulator and demultiplexer are mounted below deck.

The receiver accepts rf signals between 240 MHz and 340 MHz, a modulation bandwidth of 25 kHz. The combiner-demodulator demodulates the rf input from the amplifier convertor and provides a 1200-bps output for the demultiplexer. The demultiplexer accepts an input of 1200 bps and outputs 15 channels at 75 bps. The decrypted demultiplexer output is patched to NAVMACS, TACINTEL processors, or tele-typewriters.

Antennas

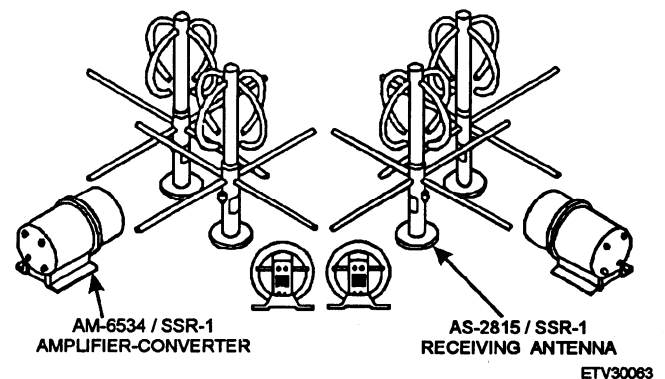SATCOM antennas will be discussed in volume 7 of this training series.

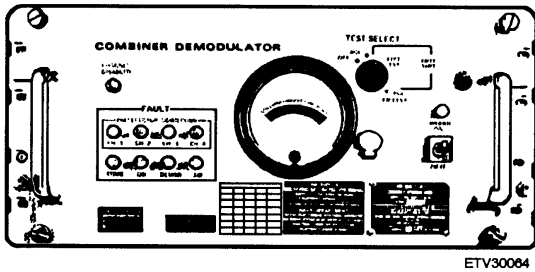Figure 3-25.—Receiving Antenna AS-2815/SSR-1 and Amplifier Converters AM-6534/SSR-1.
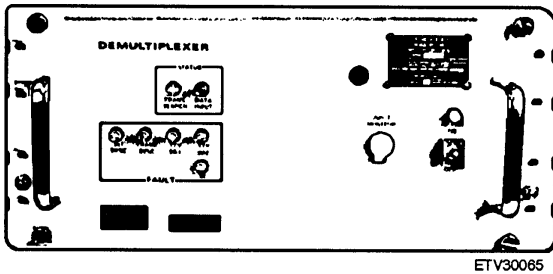
Figure 3-26.—Combiner-Demodulator MD-900/SSR-1.

Figure 3-27.—Demu1tiplexer TD-1063/SSR-1.

Modem Group OM-43A/USC

The OM-43A/USC shown in figure 3-28 is used primarily with the AN/WSC-5(V) transceiver at shore installations. It performs differential phase-shift keying (DPSK) modulation and demodulation of a
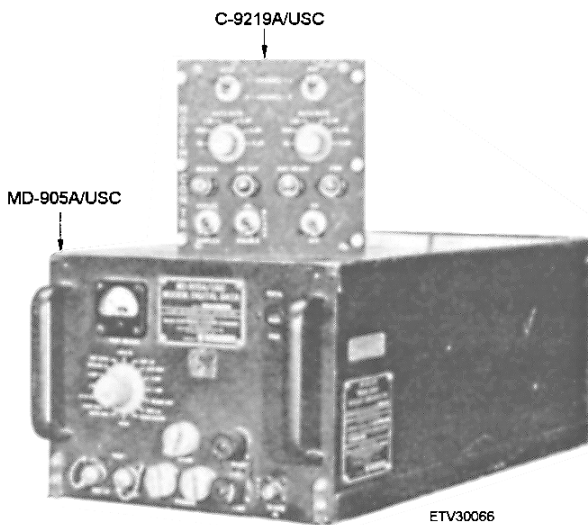

Figure 3-28.—Modem Group OM-43A/USC.

serial data stream at data rates of 75, 300, 1200, 2400, 4800, and 9600 bits per second. This modem can be operated in fill-duplex, although normal operation is half-duplex.

Modulator-Demodulator OM-51A/FR

This modem is an integral part of the Fleet Satellite Broadcast subsystem. It is a spread spectrum (wide bandwidth with frequency modulation of a transmitter and receiver in exact synchronization) type modem used with the AN/FSC-79 satellite communications terminal to provide rf transmission capability in a high-level jamming environment. Shown in figure 3-29, its basic function is to provide rf analog and digital conditioning circuits and frequency synthesizing for dual-redundant transmission and reception. It interfaces with the AN/FSC-79 terminal and the AM-6534/ SSR-1 amplifier-convertor.
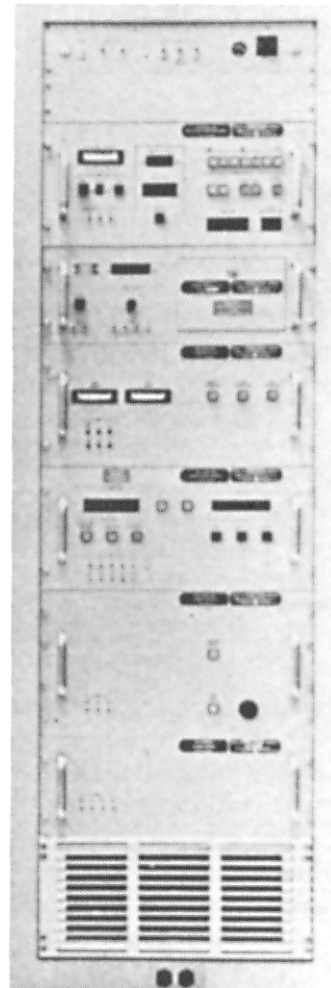

Figure 3-29.—Modulator-Demodulator Group OM-51A/FR.

3-29

Figure 3-30.—Data Processing Set AN/UYK-20(V).

This installation consists of a standard cabinet containing seven assemblies: a summary control panel, frequency synthesizer, receiver-synchronizer, coder-modulator, demodulator, and two power supplies.

Data Processing Set AN/UYK-20(V)

The AN/UYK-20(V), figure 3-30, is a general-purpose processor designed to meet the requirements of small and medium processor applications in shipboard or shore military facilities. The processor is used in the CUDIXS, NAVMACS, SSIXS (shore installations), and TACINTEL subsystems.

Data Processing Set AN/UYK-44(V)

The AN/UYK-44(V), figure 3-31, was designed to meet the same requirements as the AN/UYK-20(V), and to use AN/UYK-20(V) software with minimum modifications. It is used in the TADIXS subsystem,
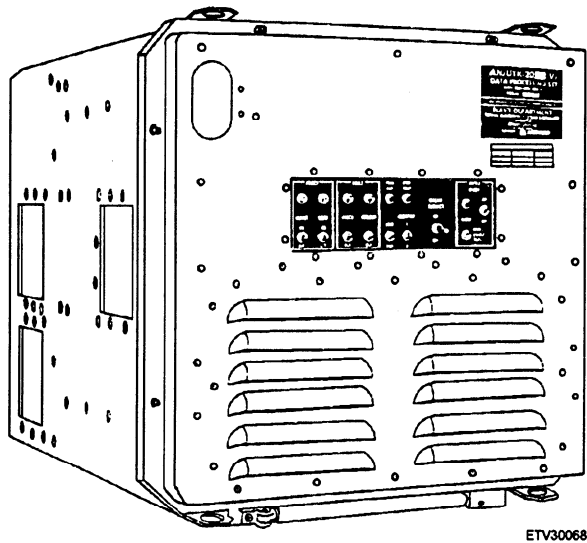

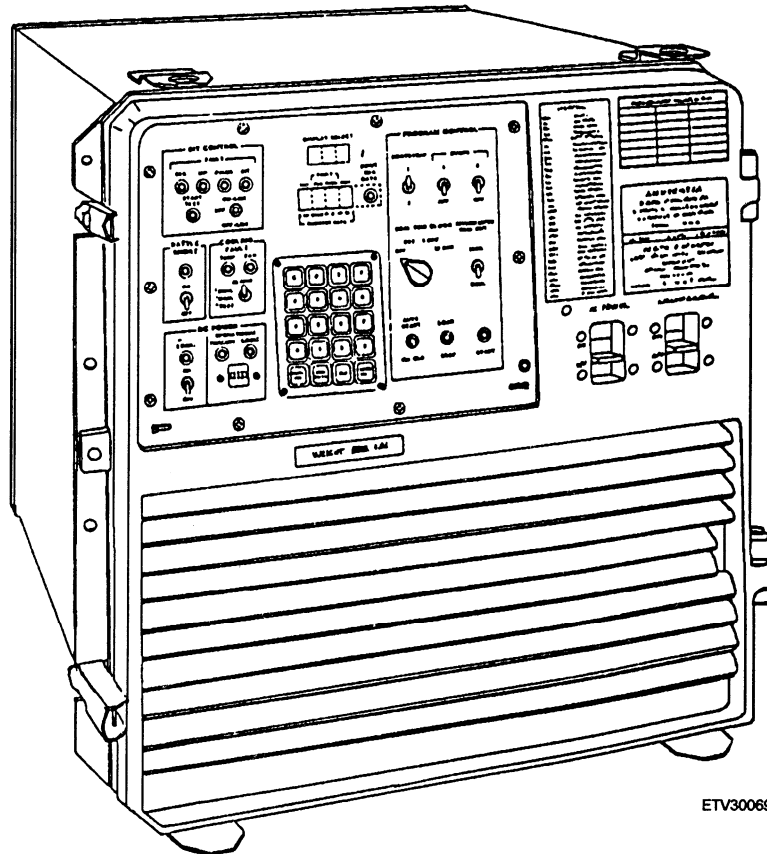Figure 3-31.—Data Processing Set AN/UYK-44(V).

Communication System Control Center
AN/USQ-64(V)

This control center is used to pass satellite data traffic efficiently and bidirectionally between a ship and shore. It turns associated transmitters on and off according to a polling scheme. It also uses detection and correction and sends automatic requests for retransmission to improve received data accuracy. The ten AN/USQ-64(V) variations and their uses are as follows:

- (V)1—SSIXS shore installations

- (V)2—CUDIXS shore installations

- (V)3—SSIXS subscriber installations

- (V)4—NAWCS shore installations

- (V)5—TACINTEL ship subscriber, for passing Special Intelligence (S1) data traffic bidirectionally between a NCTS and fleet nets

- (V)6—TACINTEL shore installations, for the same purpose as (V)5

- (V)7—OTCIXS: fixed submarine or shipboard installations for passing TDP formatted data and teletypewriter traffic

- (V)8—TADIXS ship and submarine installations

- (V)9—TADIXS Gateway Facility (TGF)

- (V10)—Tactical Data Processor Controller

Interconnecting Group ON-143(V)/USQ

Each ON-143(V)/USQ configuration varies, depending on its particular use. It fits within limited spaces aboard small ships and submarines, performing a variety of functions related to several input-output channels of the control processor. It provides red-black isolation, synchronization of crypto units, level conversions, and crypto test and alarm signals. It also provides crypto control and interfaces baseband system components with rf link equipment. An ON-143(V) 4/USQ is shown in figure 3-32.

Data Terminal Set AN/USQ-69(V)

The Data Terminal Set shown in figure 3-33 has a 15-inch diagonal screen on which a 2000 character page can be displayed. The memory is available in two
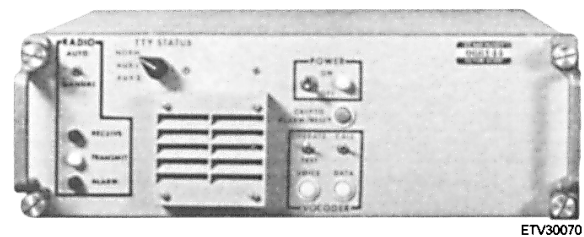

Figure 3-32.—Interconnecting Group ON-143(V)4/USQ.

sizes, 2000 and 6000 characters. When memory overflows as a result of computer output, a computer interrupt is initiated. Overflow as a result of operator input causes an audible alarm. This unit is currently used with TACINTEL (ship) and NAVMACS.
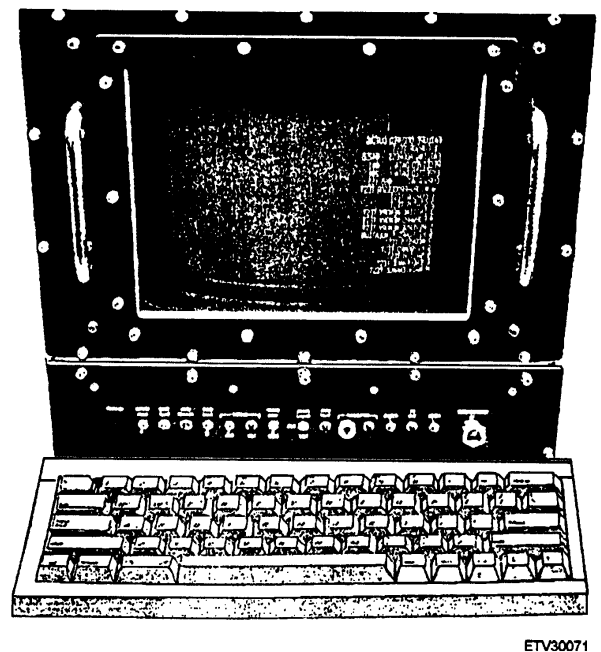

Figure 3-33.—Data Terminal Set AN/USQ-69(V).