

AER.1F-104S/ASA-1

#### EMERGENCY UHF CONTROL PANEL

THE EMERGENCY UHF CONTROL PANEL (FIGURE 1-28) LOCATED ON THE COCKPIT LEFT CONSOLE, CONSISTS OF A RECEIVE OR TRANSMIT SELECT SWITCH, A CHANNEL SELECT SWITCH, A VOLUME CONTROL, AND A SQUELCH CONTROL.

CHANNEL SELECT SWITCH. THIS FOUR-POSITION SWITCH ENERGIZES THE EQUIPMENT TO STANDBY CONDITION. FREQUENCIES FROM 242.0 TO 244.0 MC CAN BE PRESET IN CHANNELS 1 AND 2, AS DESIRED. THE GUARD POSITION SELECTS A CRYSTAL-CONTROLLED GUARD FREQUENCY OF 243.0 MC.

RCV-RCV/XMT SWITCH. THE RCV-RCV/XMT SWITCH TRANSFERS THE MICROPHONE SWITCHING CIRCUITRY BETWEEN THE MAIN UHF (RECEIVE POSITION) AND EMERGENCY UHF (RECEIVE AND TRANSMIT POSITION). IN THE RVC POSITION, 28-VOLT DC POWER IS SUPPLIED FROM THE NO. 1 EMERGENCY DC BUS TO THE EMERGENCY UHF. WHEN THE SWITCH IS IN THE RCV/XMT POSITION, 28-VOLT DC POWER IS SUPPLIED FROM THE BATTERY BUS.

VOL CONTROL. THE VOLUME CONTROL PROVIDES A MEANS OF ADJUSTING EMERGENCY UHF AUDIO LEVEL.

#### AN/AIC-18 INTERPHONE

THE AN/AIC-18 INTERPHONE IS AN INTEGRAL PART THE AN/ARC-552 UHF COMMAND RADIO PACKAGE. THE INTERPHONE SYSTEM RECEIVES ITS POWER FROM THE NO. 1 EMERGENCY DC BUS. IF THE EMERGENCY DC BUS FAILS, THE EMERGENCY INTERPHONE WILL BE POWERED FROM THE NO. 1 BATTERY BUS; THE INTERPHONE PROVIDES AMPLIFICATION OF ALL TRANSMITTED AND RECEIVED AUDIO SIGNALS AND COMMUNICATIONS BETWEEN THE PILOT AND GROUND CREW DURING STARTING AND PRETAXI PROCEDURES. THE INTERPHONE IS CONNECTED TO THE AIRCRAFT THROUGH A JACK IN THE EXTERNAL POWER RECEPTACLE. THE PILOT CAN RECEIVE COMMUNICATION FROM THE GROUND CREW WHENEVER THE AN/ARC-552 RADIO IS OPERATING AND HIS HEADSET IS CONNECTED. IN ORDER TO TRANSMIT TO THE GROUND CREW, THE PILOT MUST FIRST DEPRESS AND HOLD THE INTERPHONE BUTTON (FIGURES FO-4 THRU FO-7) LOCATED ON THE RIGHT CONSOLE. THE LANDING GEAR WARNING, MISSILE SIGNAL TONE, TACAN AND AN/ARC-552 UHF COMMAND RADIO ARE RECONNECTED TO THE INTERPHONE SYSTEM.

#### (AWX OR FB) IFF AND SIF SET, AN/APX-46

THE AN/APX-46 IFF AND SIF SET IS AN AIRBORNE PULSETYPE TRANSPONDER WHICH ENABLES THE AIRCRAFT TO IDENTIFY ITSELF WHENEVER IT IS CHALLENGED BY INTERROGATING SYSTEMS EQUIPPED FOR MARK X OR SIF (SELECTIVE IDENTIFICATION FEATURE) REPLIES. THE SYSTEM UTILIZES DC POWER FROM THE NO. 1 EMERGENCY DC BUS AND AC POWER FROM THE EMERGENCY AC BUS. THE SIF REPLY PERMITS THE AIRCRAFT TO REVEAL ITSELF AS FRIENDLY WHEN INTERROGATED. ALSO, IT CAN IDENTIFY ITSELF WITH REGARD TO SERIAL NUMBER, FLIGHT NUMBER, MISSION, OR ANY OTHER PREVIOUSLY ARRANGED METHOD. THE IFF SYSTEM IS USUALLY OPERATED IN CONJUNCTION WITH SEARCH RADAR. IFF INTERROGATION SIGNALS AUTOMATICALLY ACTUATE THE TRANSMISSION OF A CODED REPLY WHICH IS RECEIVED AND DISPLAYED ON A PLAN POSITION INDICATOR OR LETTER SYMBOL INDICATOR ENABLING SPECIFIC IDENTIFICATION AND LOCATION OF THE AIRCRAFT. TWO CONTROL PANELS ARE PROVIDED: THE IFF PANEL IS USED TO ENERGIZE, SET, AND SELECT THE CONDITIONS AND MODES OF OPERATION, AND THE SIF PANEL PERMITS THE PILOT TO SELECT THE SIF CODED REPLIES IN MODE 1 AND MODE 3.

#### IFF CONTROL PANEL

THE IFF CONTROL PANEL (FIGURE 1-29) IS LOCATED ON THE RIGHT CONSOLE. THE PANEL IS EQUIPPED WITH TWO ILLUMINATING LAMPS AND THE CONTROLS LISTED IN THE FOLLOWING PARAGRAPHS.

EMERGENCY DIAL STOP. THE EMERGENCY DIAL STOP MUST BE PRESSED IN ORDER TO ROTATE THE MASTER SWITCH TO THE EMERGENCY POSITION.

MASTER SWITCH. THE MASTER SWITCH IS A FIVE-POSITION ROTARY SWITCH PERMITTING SELECTION OF THE FOLLOWING POSITIONS AND OPERATION CONDITIONS:

OFF WHEN THE SWITCH IS IN THE OFF POSITION THE SET IS DEENERGIZED.

STDBY WHEN THE SWITCH IS IN THE STDBY POSITION, ALL PRIMARY POWER IS TURNER ON AND TUBES ARE WARM AND READY FOR IMMEDIATE OPERATION. HOWEVER THE TRANSPONDER RECEIVER IS NOT SENSITIZED, THUS NO REPLIES CAN BE TRANSMITTED.

NORM WHEN THE SWITCH IS IN THE NORM POSITION, THE TRANSPONDER RECEIVER IS OPERATED IN ANY OF THE 32 MODE-1 CODES AS SELECTED BY THE MODE-1 CONTROL DIAL ON THE SIF PANEL. THE SET IS FULLY SENSITIZED AND OPERATES AT MAXIMUM CAPABILITY.

LOW WHEN THE SWITCH IS IN LOW POSITION, THE TRANSPONDER RECEIVER OPERATES THE SAME AS IN THE NORM POSITION BUT AT REDUCED SENSITIVITY; REPLIES WILL BE TRANSMITTED UPON RECEIPT OF STRONG INTERROGATION SIGNALS, ORDINARILY FROM NEARBY INTERROGATOR-RESPONDERS. TRANSMITTED POWER FROM THE TRANSPONDER IS THE SAME FOR BOTH THE LOW AND NORM POSITION.

FOLLOW FIGURE 1-29: IFF CONTROL PANELS.

EMERGENCY IF THE SWITCH IS IN THE EMERGENCY POSITION A DISTINCTIVE EMERGENCY REPLY IS TRANSMITTED IN RESPONSE TO EITHER MODE 1 OR MODE 3 INTERROGATIONS. MODE 3 PERMITS QUICKER POSITIVE IDENTIFICATION OF THE AIRCRAFT IN DISTRESS. THE REPLY IS FOUR SUCCESSIVE GROUPS OF SELECTED PULSE TRAINS. THE EMERGENCY CODE IS ACTUATED AUTOMATICALLY UPON EJECTION OF THE PILOT.

MODE 2 SWITCH. THE MODE 2 SWITCH HAS TWO POSITIONS, OUT AND MODE 2. IN THE MODE 2 POSITION (PROVIDED THE MASTER SWITCH IS IN LOW OR NORM) THERE ARE 4096 POSSIBLE REPLY CODES AVAILABLE. THE NUMBER AND INTERVAL OF THESE CODES MUST BE PRESET ON THE CODE SELECTOR, LOCATED ON THE TRANSPONDER, PRIOR TO FLIGHT.

MODE 3 SWITCH. THE MODE 3 SWITCH HAS TWO POSITIONS OUT AND MODE 3. IN THE MODE 3 POSITION (PROVIDED THE MASTER SWITCH IS IN LOW OR NORM) THERE ARE 64 POSSIBLE REPLY CODES AVAILABLE TO THE PILOT AS SELECTED BY THE MODE 3 DIAL ON THE SIF PANEL.

I/P-OUT-MIC SWITCH. THE I/P-OUT-MIC SWITCH OPERATES IN SIF AS FOLLOWS:

I/P HOLDING THE SWITCH IN THE I/P (SPRING LOADED) POSITION CAUSES A DOUBLE MODE 1 OR MODE 3 CODE TRAIN TO BE TRANSMITTED IN RESPONSE TO EACH MODE 1 OR MODE 3 INTERROGATION. THIS RESPONSE WILL CONTINUE FOR 30 SECONDS AFTER THE SWITCH IS RELEASED TO OUT FROM THE I/P POSITION.

MIC PLACING THE SWITCH IN THE MIC POSITION PRODUCES THE SAME RESULTS AS HOLDING THE SWITCH IN THE I/P POSITION, EXCEPT THAT THE RESPONSE OCCURS ONLY WHEN THE MICROPHONE BUTTON ON THE THROTTLE IS DEPRESSED. THUS, IT IS NOT NECESSARY FOR THE PILOT TO REMOVE HIS HAND FROM THE THROTTLE IN ORDER TO REPLY TO MODE 1 OR MODE 3 INTERROGATIONS.

SIF CONTROL PANEL

THE SIF CONTROL PANEL (FIGURE 1-29) IS LOCATED ON THE RIGHT CONSOLE ADJACENT TO THE IFF PANEL. THE PANEL PROVIDES SELECTION OF THE VARIOUS REPLY CODES IN BOTH MODE 1 AND MODE 3 TRANSPONDER OPERATION. THE PANEL CONTAINS TWO ILLUMINATING LAMPS AND TWO COAXIAL DIALS LABELED MODE 1 AND MODE 3. THEIR DESCRIPTION AND OPERATION IS COVERED IN THE FOLLOWING PARAGRAPHS.

MODE 1 DIAL. THE MODE 1 DIAL CONSISTS OF TWO COAXIAL KNOBS, THE OUTER KNOB OF WHICH BEARS THE NUMBERS 0 THROUGH 7 AND THE INNER KNOB FROM 0 THROUGH 3. THIS MAKES POSSIBLE 32 DIFFERENT SELECTED RESPONSES FOR MODE-1 OPERATION. THE SET WILL RESPOND TO MODE-1 INTERROGATIONS ACCORDING TO THE CODE SELECTED ON THE

MODE-1 DIAL WHENEVER THE MASTER SWITCH ON THE IFF PANEL IS IN THE LOW OR NORM POSITION. MODE 1 WILL OPERATE INDEPENDENTLY OF OR CONCURRENTLY WITH MODE 2 AND 3 OPERATION. FOR A NUMERICAL CODE DESIGNATION SUCH AS "52", SET THE OUTER KNOB TO 5 AND THE INNER KNOB TO 2.

#### NOTE

THE PILOT HAS NO CONTROL OVER SELECTION OF MODE 2 CODE REPLIES. THE NUMBER AND INTERVAL OF THESE REPLIES MUST BE PRESET ON THE CODE SELECTOR OF THE TRANSPONDER PRIOR TO FLIGHT.

MODE 3 DIAL. THE MODE 3 DIAL ALSO CONSISTS OF TWO COAXIAL KNOBS. BOTH THE OUTER AND INNER DIALS ARE PLACARDED FROM 0 THROUGH 7, MAKING POSSIBLE 64 DIFFERENT SELECTED RESPONSES FOR MODE-3 OPERATION. THE SET WILL RESPOND TO MODE-3 INTERROGATIONS ACCORDING TO THE CODE SELECTED ON THE MODE-3 DIAL PROVIDED THE IFF PANEL MASTER SWITCH IS IN THE LOW, NORM, OR EMERGENCY POSITION AND THE MODE 3 SWITCH IS IN MODE 3 POSITION AND OR THE I/P-OUT-MIC SWITCH IS IN I/P OR MIC POSITION (AWX OR FB).

#### (ASA) IFF SYSTEM

THE SIT 421T IFF SYSTEM CONSISTS, PRIMARILY, OF A CONTROL PANEL, A TRANSPONDER UNIT AND TWO ANTENNAS. THE IFF CONTROL PANEL IS LOCATED ON THE RIGHT CONSOLE WHILE THE IFF TRANSPONDER IS LOCATED IN THE BATTERY BAY. THE UPPER ANTENNA IS INSTALLED ON THE PANEL OF THE ELECTRONIC COMPARTMENT AND THE LOWER ANTENNA ON THE VENTRAL FIN. THE IFF SYSTEM PROVIDES AUTOMATIC IDENTIFICATION OF THE AIRCRAFT WHEN CHALLENGED BY OTHER AIRBORNE OR GROUND RADAR INSTALLATION. THE MODES OF OPERATION HAVE THE FOLLOWING SIGNIFICANCE: MODE 1 - SECURITY IDENTITY, MODE 2 - PERSONAL IDENTITY, MODE 3/A - AIR TRAFFIC IDENTITY, MODE C - ALTITUDE REPORTING AND MODE 4 - SECURITY IDENTITY (PROVISION ONLY). THE IFF SYSTEM TRANSMITS CODED REPLIES TO CORRECTLY CODED INTERROGATIONS. THE SYSTEM UTILIZES 28-VOLT DC POWER FROM THE NO. 1 EMERGENCY DC BUS OR 155-VOLT, 400-CYCLE AC POWER FROM THE EMERGENCY AC BUS.

THE IFF TRANSPONDER IS A DIVERSITY TRANSPONDER OPERATING ACCORDING TO THE MARK XA-SIF SYSTEM IN MODES 1, 2, 3/A AND C. WHEN THE CRYPTO-COMPUTER IS INSTALLED, THE EQUIPMENT IS ENABLED TO OPERATE IN MODE 4. THE TRANSPONDER RECEIVES INTERROGATIONS ON A CARRIER FREQUENCY OF 1030 MHZ VIA TWO ANTENNAS; THE SIGNALS ARE DECODED AND REVEALED, AND IF INTERROGATION IS CORRECT, REPLY TRANSMISSION IS ENABLED VIA THE ANTENNA WHICH HAS RECEIVED THE STRONGEST SIGNAL. REPLY SIGNALS ARE TRANSMITTED ON A CARRIER FREQUENCY OF 1090 MHZ. NORMAL OPERATION OF THE TRANSPONDER IS COSTANTLY MONITORED BY THE BIT CIRCUITS; INCORRECT PERFORMANCE CAUSES A NO GO INDICATION LAMP TO BE DISPLAYED.

#### CRYPTO-COMPUTER (PREDISPOSITION ONLY)

THE CRYPTO-COMPUTER WILL BE INSTALLED IN THE BATTERY BAY AND BE USED FOR MODE-4 OPERATION ONLY.

#### IFF CONTROL PANEL

THE IFF CONTROL PANEL (FIGURE 1-30) IS LOCATED ON THE RIGHT CONSOLE AND HAS THE FOLLOWING CONTROLS AND INDICATORS.

TEST-GO LAMP. WHEN ILLUMINATED IT INDICATES CORRECT OPERATION OF THE IFF SYSTEM IN SELF-TEST OF MODE 1, OR 2 OR 3A OR C WHEN THE RESPECTIVE SWITCHES ARE POSITIONED TO TEST POSITION.

TEST/MON-NO GO LAMP. WHEN ILLUMINATED IT INDICATES INCORRECT OPERATION OF THE IFF SYSTEM DURING SELF-TEST OF MODE 1, OR 2 OR 3A OR C WHEN THE RESPECTIVE SWITCHES ARE POSITIONED TO TEST POSITION. IT ALSO INDICATES THAT THE IFF SYSTEM DOES NOT RESPOND PROPERLY TO THE RECEIVED INTERROGATIONS.

ANT SWITCH. THIS THREE POSITION TOGGLE SWITCH PERMITS THE FOLLOWING ANTENNA SELECTION:

TOP ONLY THE UPPER ANTENNA IS USED.

DIV THE SYSTEM AUTOMATICALLY SELECTS THE ANTENNA TO BE USED FOR

TRANSMISSION; RECEPTION IS THROUGH BOTH ANTENNAS.  
BOT ONLY THE LOWER ANTENNA IS USED.

MASTER SELECTOR. THIS FOUR POSITION ROTARY SELECTOR HAS THE FOLLOWING POSITIONS:  
OFF THE SYSTEM IS DE-ENERGIZED.  
STBY PLACES RECEIVER-TRANSMITTER IN WARM-UP (STANDBY CONDITION). SELECTOR SHOULD REMAIN IN STBY A MINIMUM OF 1 MINUTE FOR STANDARD TEMPERATURE CONDITIONS AND 5 MINUTES UNDER EXTREME RANGES OF TEMPERATURE.  
NORM THE SYSTEM IS IN OPERATION.  
EMFR TRANSMITS EMERGENCY REPLY SIGNALS TO MODE 1, 2 OR 3/A INTERROGATIONS REGARDLESS OF MODE CONTROL SETTING.

FOLLOW FIGURE 1-30: IFF CONTROL PANEL

NOTE

\* THE EMER POSITION ENABLES THE FUNCTIONS OF ALL OPERATING MODES REGARDLESS OF THE POSITION OF THE M-1, M-2, M-3A OR M-C SWITCHES.

\* THE EMER FUNCTION ENABLES MODE 4 AND C REGARDLESS OF THE POSITION OF THE MASTER SELECTOR. THE TRANSMISSION OF AN EMERGENCY REPLY REQUIRES THAT AN INTERROGATION SIGNAL BE RECEIVED PRIOR TO ENABLING TRANSMISSION.

\* THE EMERGENCY FUNCTIONS ARE AUTOMATICALLY ENABLED, THROUGH A PULL CONNECTOR ON THE EJECTION SEAT, WHEN THE PILOT EJECTS.

RAD TEST-OUT SWITCH. THE RAD TEST-OUT SWITCH IS A TWO TOGGLE SWITCH WITH THE FOLLOWING POSITIONS:

RAD ENABLES AN APPROPRIATELY EQUIPPED TRANSPONDER TO REPLY TO TEST MODE TEST INTERROGATION FROM TEST EQUIPMENT. IN RAD TEST POSITION, THE SWITCH IS SPRING-LOADED TO RETURN TO THE OUT POSITION.

OUT DEENERGIZES RAD TEST POSITION. THE OUT POSITION SHOULD BE SELECTED WHEN ACTIVATING A SWITCH TO TEST POSITION.

ALT, KIT, ANT LAMPS. THESE LAMPS ARE ILLUMINATED WHEN M1, M2, M3/A, M4 OR M-C MODE SWITCHES ARE IN TEST POSITION. THE ALT LAMP ILLUMINATES WHEN ADC DATA ARE NOT RECEIVED BY THE IFF SYSTEM. THE KIT LAMP ILLUMINATES WHEN THE DATA PROCESSED BY THE KIT-1A/TSEC COMPUTER ARE NOT RECEIVED BY THE IFF SYSTEM; OPERATIVE WITH CRYPTO-COMPUTER INSTALLED ONLY. THE ANT LAMP ILLUMINATES INDICATING A MALFUNCTION OF ONE OF THE TWO ANTENNAS OR THAT THE STANDING WAVE RATIO IS HIGHER THAN 3:1.

REPLY LAMP. THE REPLY LAMP IS OPERATED BY THE AUDIO-LIGHT-OUT SWITCH. IT ILLUMINATES WHEN VALID MODE 4 REPLIES ARE PRESENT. OPERATIVE ONLY WITH CRYPTO-COMPUTER INSTALLED.

IDENT-OUT-MIC SWITCH. THIS THREE POSITION SWITCH HAS THE FOLLOWING POSITIONS:

IDENT WHEN MOMENTARILY ACTUATED (SPRING-LOADED TO RETURN), ENABLES A SPECIAL REPLY FOR APPROXIMATELY 20 SECONDS.

OUT PREVENTS TRANSMISSION OF IDENTIFICATION POSITION REPLIES.

MIC ENABLES IDENTIFICATION OF POSITION REPLIES TO BE TRANSMITTED FOR APPROXIMATELY 20 SECONDS EVERY TIME THE PTT PUSHBUTTON, LOCATED ON THE ENGINE THROTTLE OR ON THE CONTROL STICK GRIP, IS PRESSED.

AUDIO-LIGHT-OUT SWITCH. THIS SWITCH IS OPERATIVE ONLY WITH THE CRYPTO-COMPUTER INSTALLED AND HAS THE FOLLOWING POSITIONS:

AUDIO ENABLES AURAL TONE AND REPLY LAMP MONITORING OF VALID MODE 4

INTERROGATIONS AND REPLIES ONLY.

LIGHT ENABLES REPLY LAMP MONITORING OF VALID MODE 4 INTERROGATIONS AND REPLIES ONLY.

OUT DISABLES AURAL AND REPLY LAMP MONITORING IF MODE 4.

MODE 3/A CODE SELECTORS. IT INCLUDES FOUR ALIGNED PUSHBUTTONS PERMITTING SELECTION OF THE REPLY CODE FOR MODE 3/A (DIGITS FROM 0 TO 7).

MODE 1 CODE SELECTORS. IT INCLUDES TWO PUSHBUTTONS SELECTING THE REPLY CODE FOR MODE 1. THE LEFT ONE SELECTS A DIGIT FROM 0 TO 7, THE NEXT ONE A DIGIT FROM 0 TO 3.

MODE 4 TEST SWITCH. THIS SWITCH, OPERATIVE WITH THE CRYPTO-COMPUTER INSTALLED ONLY, HAS THE FOLLOWING POSITIONS.

TEST MOMENTARY POSITION. PERMITS SELF-TEST OF THE IFF TRANSPONDER IN MODE 4 OPERATION.

ON ENABLES THE RECEIVER-TRANSMITTER TO REPLY TO MODE 4 INTERROGATIONS.

OUT DISABLES THE REPLY CAPABILITY TO MODE 4 INTERROGATIONS.

CODE SELECTOR. THIS ROTARY SELECTOR, OPERATIVE ONLY WITH THE CRYPTO-COMPUTER INSTALLED HAS THE FOLLOWING POSITIONS:

HOLD RETAINS CODE IN THE COMPUTER WHEN AIRCRAFT HAS LANDED.

A SELECTS A COMPUTER CODE.

B SELECTS B COMPUTER CODE.

ZERO ERASES MODE 4 CODE FROM COMPUTER.

MODE SWITCH. FOUR THREE-POSITION TOGGLE SWITCHES, LABELED M-1, M-2, M-3/A AND M-C, PERMIT THE FOLLOWING OPERATION:

OUT THE CORRESPONDING MODE IS DISABLED.

ON PREDISPOSITION REPLIES WHEN THE IFF TRANSPONDER IS INTERROGATED IN THE CORRESPONDING MODE.

NOTE

MODE C IS ENABLED WITH M-3/A SWITCH TO ON ONLY.

TEST MOMENTARY POSITION. A SELF-TEST IS CARRIED OUT (TEST GO LIGHT ON), PROVIDED THE MASTER SELECTOR IS IN NORM OR EMER POSITION.

IFF OPERATION

OPERATION OF THE SYSTEM IS OBTAINED BY MOVING THE MASTER SELECTOR TO ANY POSITION (EXCEPT THE OFF POSITION). THE STBY POSITION IS USED TO WARM-UP THE SET AND TO MAINTAIN THE SYSTEM READY FOR OPERATION. TRANSMISSION TAKES PLACE ONLY WHEN THE MASTER SELECTOR IS IN NORM AND EMER POSITIONS. IN CASE OF SEAT EJECTION, THE SELECTOR SWITCH PERMITS TRANSMISSION OF THE EMERGENCY SIGNALS REGARDLESS OF ITS POSITION. BY MOVING THE MASTER SELECTOR TO EMER, ONLY MODES 1, 2 AND 3/A ARE ENABLED. THE TRANSCIEVER NORMALLY OPERATES WITH THE MASTER SELECTOR IN NORM POSITION. MAXIMUM SENSITIVITY IS AUTOMATICALLY OBTAINED WHEN EITHER THE SELECTORS IS IN EMER POSITION OR THE SEAT IS EJECTED.

SYSTEM STARTING

TO START THE SYSTEM PROCEED AS FOLLOWS:

1. MASTER SELECTOR - STBY FOR 1 MINUTE UNDER STANDARD TEMPERATURE CONDITIONS (5 MINUTES UNDER EXTREME TEMPERATURE CONDITIONS), THEN TO NORM
2. MODE CODE SELECTORS - AS REQUIRED
3. MODE SWITCHES - ON
4. IDENT/OUT/MIC SWITCH - OUT
5. ANT SWITCH - DIV

#### IDENTIFICATION-OF-POSITION OPERATION

WHEN THE IDENT-OUT-MIC SWITCH IS ENERGIZED, THE SYSTEM TRANSMITS POSITION IDENTIFYING SIGNALS TO ALL INTERROGATING STATIONS OF MODES 1, 2 AND 3/A. TRANSMISSION OF THE IDENTIFICATION-OF-POSITION SIGNAL OCCURS IN THESE MODES EVEN IF THE MODE SWITCHES ARE IN THE OUT POSITION. THE TWO TYPES OF IDENTIFICATION-OF-POSITION ARE FOLLOWS:

1. MOMENTARILY HOLD THE IDENT-OUT-MIC SWITCH IN THE IDENT POSITION, THEN RELEASE. THIS ACTION CAUSES THE IDENTIFICATION-OF-POSITION SIGNAL TO BE TRANSMITTED FOR A PERIOD OF 20 SECONDS TO ALL INTERROGATION STATIONS ON MODE 1, 2 AND 3/A. REPEAT AS REQUIRED.
2. SET THE IDENT-OUT-MIC SWITCH TO THE MIC POSITION. IDENTIFICATION-OF-POSITION SIGNALS ARE TRANSMITTED BY PRESSING ONE OF TWO PTT PUSH-BUTTONS LOCATED ON THE CONTROL STICK GRIP OR ON THE ENGINE THROTTLE. WHEN THE NEED FOR FURTHER IDENTIFICATION SIGNALS HAS ENDED, RETURN THE IDENT-OUT-MIC SWITCH TO THE OUT POSITION.

#### EMERGENCY OPERATION

DURING AN AIRCRAFT EMERGENCY OR DISTRESS CONDITION, THE SYSTEM IS USED TO TRANSMIT SPECIALLY CODED SIGNALS ON MODES 1, 2 AND 3/A TO ALL INTERROGATING STATIONS. THESE EMERGENCY SIGNALS ARE TRANSMITTED AS LONG AS THE MASTER SELECTOR REMAINS IN THE EMER POSITION. FOR EMERGENCY OPERATION, PROCEED AS FOLLOWS:

1. PULL AND ROTATE THE MASTER SELECTOR TO THE EMER POSITION.
2. LEAVE THE MASTER SELECTOR IN EMER FOR THE DURATION OF THE EMERGENCY.
3. WHEN THE EMERGENCY HAS ENDED, RETURN THE MASTER SELECTOR TO THE NORM POSITION.

#### NOTE

WHEN SEAT EJECTION IS PERFORMED, THE EMERGENCY SIGNAL IS AUTOMATICALLY TRANSMITTED.

#### IFF SYSTEM SELF-TEST

SELF-TEST IS POSSIBLE FOR MODES 1, 2, 3/A AND C. WITH THE MASTER SELECTOR PLACED IN NORM POSITION, SELF-TEST IS COMMENCED BY TURNING ONE OF THE MODE SWITCHES TO TEST. A SIGNAL GENERATED FOR THE SELECTED MODE OF OPERATION ARRIVES AT THE SET AND IS PROCESSED AS A NORMAL INTERROGATION SIGNAL. NORMAL OPERATION OF THE MODE BEING TESTED IS INDICATED BY THE ILLUMINATION OF THE TEST GO LAMP.

#### IFF MODE 4 WARNING LIGHT

AN AMBER WARNING LIGHT, LOCATED ON THE LEFT SIDE OF THE INSTRUMENT PANEL (FIGURE FO-6 AND FO-7), IS RELATED TO THE IFF SYSTEM; FAILURE TO REPLY TO MODE 4 INTERROGATIONS OR A ZEROED CRYPTO-COMPUTER CODE ILLUMINATES THIS WARNING LIGHT. ILLUMINATION OF THE WARNING LIGHT IS PREVENTED TILL THE COMPUTER IS NOT INSTALLED (ASA).

## TACTICAL AIR NAVIGATION (TACAN) SYSTEM

THE TACTICAL AIR NAVIGATION SYSTEM CONSISTS OF A RECEIVER-TRANSMITTER UNIT INSTALLED IN THE ELECTRONICS COMPARTMENT, A CONTROL PANEL INSTALLED IN THE COCKPIT, AND AN ANTENNA. THE EQUIPMENT RECEIVES POWER FROM THE NO. 1 EMERGENCY DC BUS, THE NO. 2 AC BUS, AND THE SECONDARY FIXED-FREQUENCY AC BUS. THE SYSTEM OPERATES IN THE 1000-MEGACYCLE BAND. ONE HUNDRED AND TWENTY-SIX TWO-WAY OPERATING CHANNELS, SPACED 1 MEGACYCLE APART, ARE AVAILABLE.