



*Sound Quality. Sound Engineering.*

# PMA7000M-S CAP Operation

## PS Engineering, Inc.

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# PMA7000M-S Standard Versions



Standard Version PMA7000M-S

# PMA7000M-S 'Civil Air Patrol'

Added Split Com Modes

Black buttons, silver trim



Com 3 Button

# PMA7000MS-CAP Operational Training

**Demo PMA7000MS  
(NOT AIRWORTHY)**

**RS ENGINEERING<sup>®</sup>**  
Sound Quality. Sound Engineering.

**Com SWAP button**



**Copilot Headset**

**Pilot Headset**

*Civil Air Patrol  
Audio Selector Panel*

Yoke  
Mounted  
Swap Mode



Phones

Pilot

Mic

In

Phones

Copilot

Mic

**Aircraft Radio Input (Com 1 Only)**

Only pilot and copilot positions operate

# The PMA7000M-S Features:

- **Full-function audio control panel:**
  - 3 coms, 2 navs, ADF, DME
  - 3 light marker beacon receiver
- **PS Engineering's innovative:**
  - Com1/Com2 /Com 3 **Split** Mode for cockpit resource management
  - Swap Mode for ease of operation
  - 6-pole filtered mic circuits for less noise, better clarity

# Revolutionary Intercom

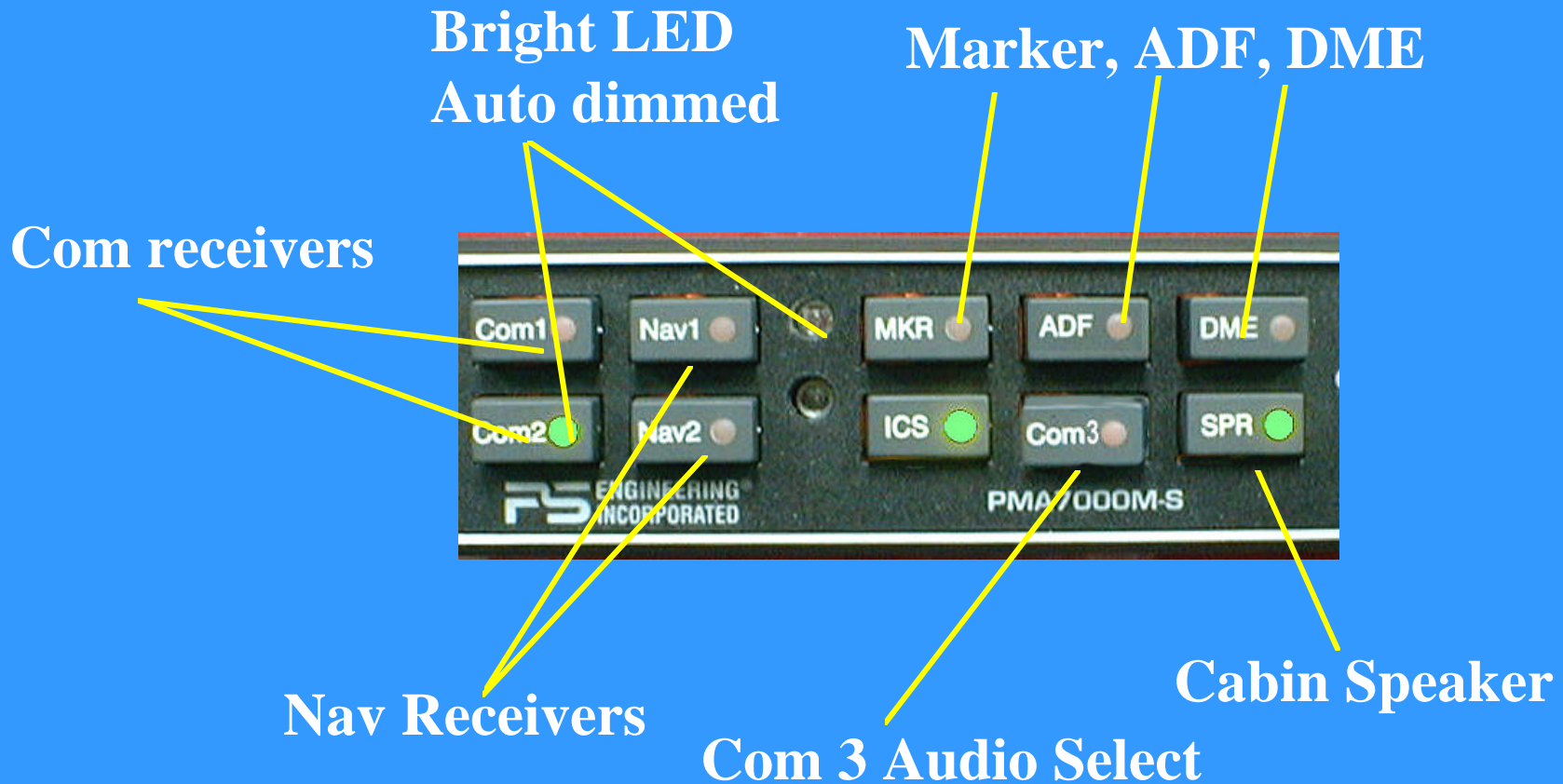
- All, ISO and Crew modes
- 6-Place Stereo intercom
  - Dual, independent auxiliary inputs
- Introducing *IntelliVox*<sup>™</sup>
  - Six INDEPENDENT mic sampling circuits
  - Constantly monitoring and adjusting VOX level
  - Field proven in helicopters and high noise cockpits
  - NO MANUAL ADJUSTMENT -EVER-

# Basic Operation

- **Push Volume Control to switch on**
  - Unless in Com 3 mode, at least one com LED will light.
  - Backlighting comes on
- **Push Volume control to switch off**
  - Fail Safe mode places pilot on Com 1
  - Copilot/passengers have no audio
- **Intercom operation: Just talk**

# PMA7000M-S Operation

## Audio Selection

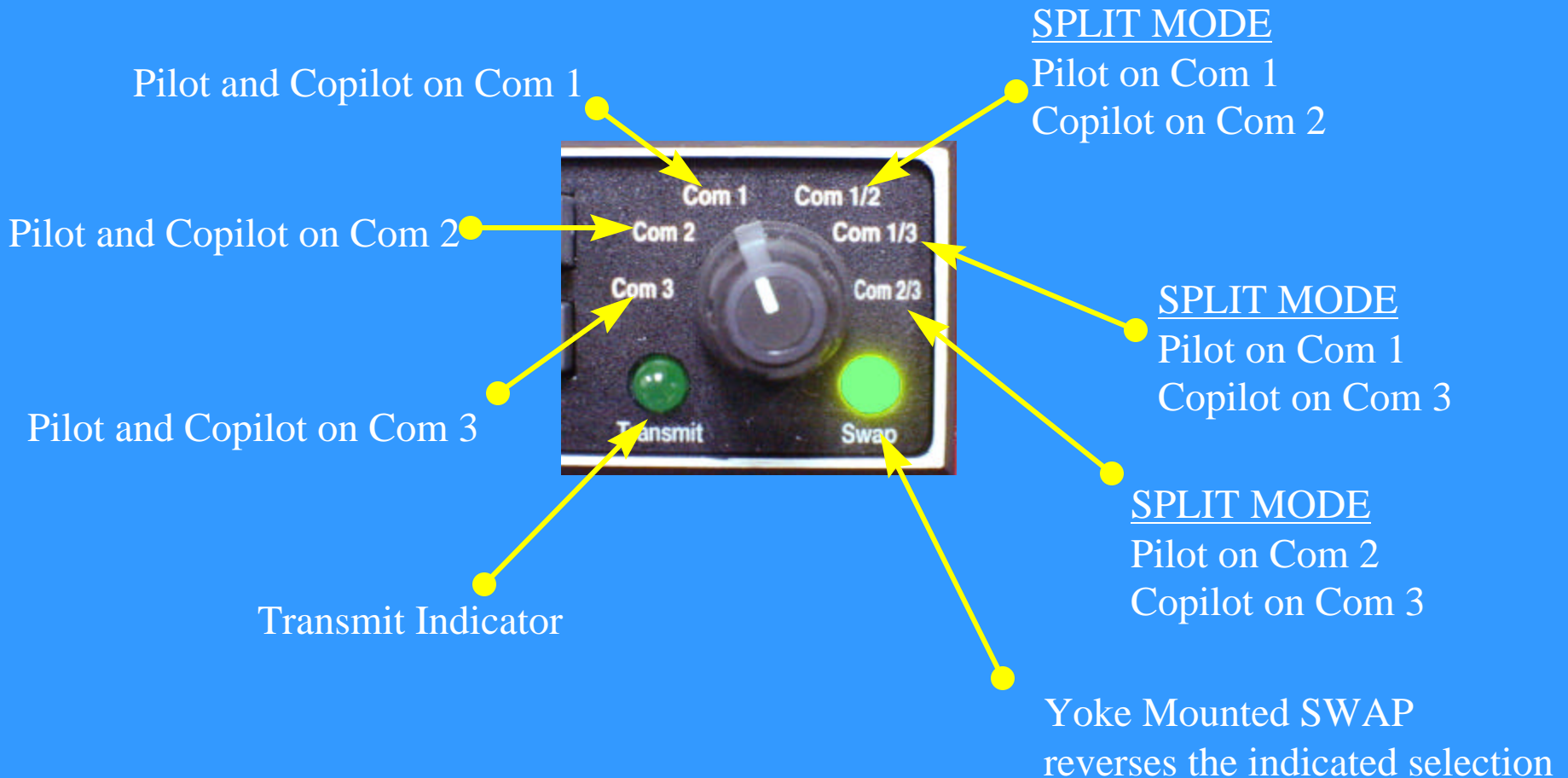




# Audio Selection

- **COM 1 and 2 are momentary buttons**
  - Receive audio always follows the Mic selector
  - Push button to add other com receive audio
- **Com 3 audio is latched**
  - Push Com 1, Com 2 and /or Com 3 to monitor
- **Receiver buttons latch**
  - Positive indication of the selected audio
  - LEDs also annunciate audio sources selected
- **SPR button places all selected audio in cabin speaker**

# Transmitter Selection



# Transmitter Selection

- **Rotary switch controls transmitter selection**
  - You can't transmit without listening to the receiver.
  - Selector has the same order as the panel -top to bottom, 1-3
- **Com 1, Com 2, Com 3**
  - Pilot and copilot can both transmit on same radio.
  - Pilot has PTT priority
  - Only person pushing PTT is heard over radio
- **Com 1/2**
  - Pilot transmit and receive on Com 1
  - Copilot transmit and receive on Com 2
- **Com 2/1**
  - Vice versa

# CAP Transmitter Combinations

Mic Selector	Normal		Swap	
	Pilot	Copilot	Pilot	Copilot
Com 1	Com 1	Com 1	Com 2	Com 2
Com 2	Com 2	Com 2	Com 1	Com 1
Com 3	Com 3	Com 3	No Swap	No Swap
Com1/2	Com 1	Com 2	Com 2	Com 1
Com 1/3	Com 1	Com 3	Com 3	Com 1
Com 2/3	Com 2	Com 3	Com 3	Com 2

If the Com 3 button is pushed in a Com 3 split mode, the pilot will also hear Com 3 audio, but no transmit.

Pushing SWAP again, or moving MIC Selector cancels swap <sup>12</sup>

# Who's talking now?

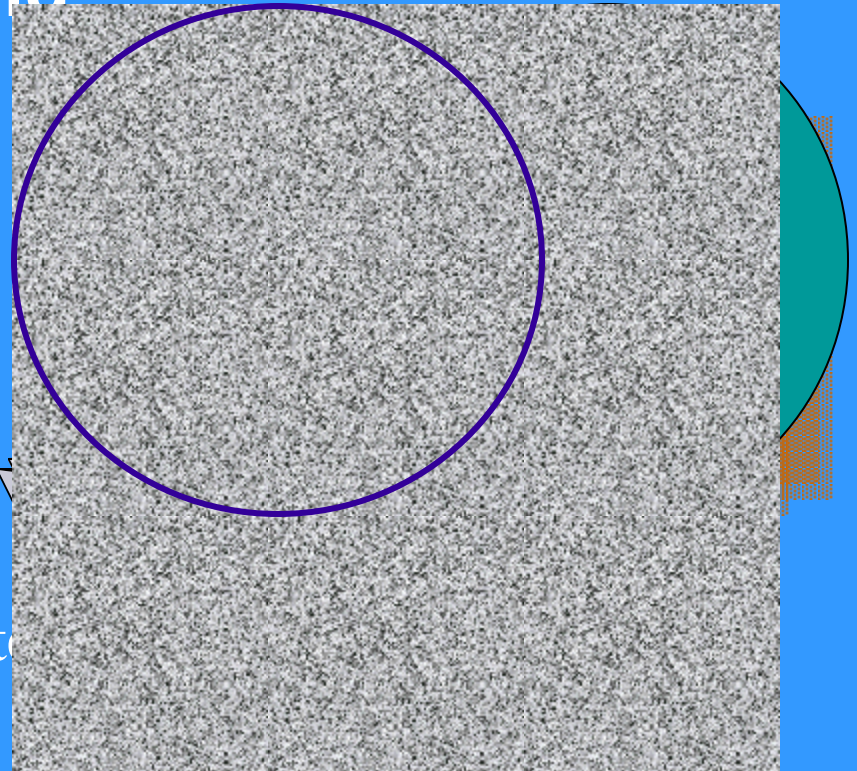
- **Com 1 or Com 2 annunciator flashes to show which radio is transmitting.**
- **Pilot hears selected receive audio in split mode**
- **If Com 3 is selected he will hear it in split, and can elect to monitor Com 3 receptions**

# Three transmit positions

- Through an external switch some aircraft can be configured to exchange the copilot connection with the observer position.
- Gives observer position any radio transmit ability.
- Copilot becomes passenger

# Split Mode Limitations

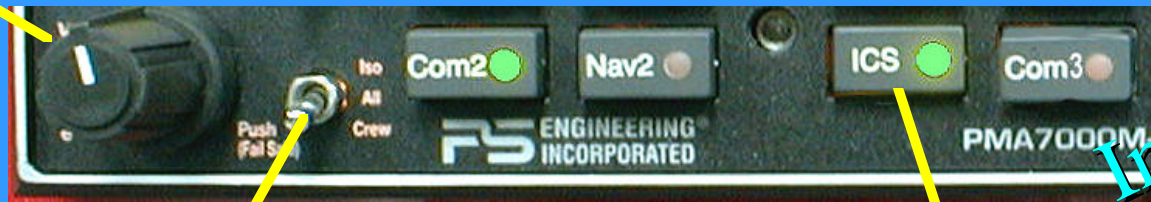
- Two comms transmitting in close proximity may bleed over.
- Depends on:
  - Emission (AM/FM=Better)
  - Frequency ( $>$  Difference =Better)
  - Transmit Power (lower=Better)
  - Antenna location (Farther=Better)



# Intercom Functions

Intercom  
Volume  
CW=Increase

Dual Independent Auxiliary Inputs  
Front and back are separated.



IntelliVOX™



Mode Select

ISO Pilot in command  
All Everybody tunes in  
Crew Front vs. back

ICS Button  
Activates Intercom in Split Modes  
Aux muting Control



# Intercom Functions

- **Volume Control**

- Only affects the intercom level.

- Not , auxiliary not radio.

- Intercom volume control for pilot and copilot only

- Rear passengers are fixed volume.

- Stereo headsets have individual volume controls, can be adjusted with screwdriver.

- **Push on/Push off switch**

- Fail-Safe mode connects pilot headset to Com 1 if unit off, or power removed.

# Intercom Modes

- **ISO**

- Pilot only hears radios
- Copilot and passengers have intercom
- Copilot hears Aux 1
- Passengers hear Aux 2

- **ALL**

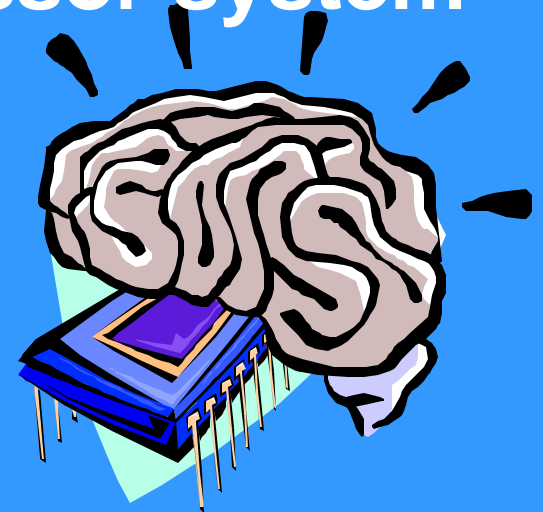
- Everybody hears everything
- Radios
- Intercom
- Pilot and copilot hear Aux 1
- Passengers hear Aux 2

- **Crew**

- Pilot & Copilot hear radios
- Pilot and copilot have separate intercom
- Passengers have intercom, no radios.
- Crew- Aux 1
- Passengers- Aux 2

# *IntelliVox*™

- **Revolutionary** microprocessor system
  - No manual control
  - 6-independent circuits
  - constant monitoring
- **Just speak normally**
  - Position microphone close to your lips
  - Use a microphone muff
  - Avoid direct drafts into microphone
  - More noise the better it works



# Intercom Entertainment

- **Aux source #1 feeds pilot and copilot headset.**
  - is muted whenever the intercom or radios are active.
- **Push “ICS” button to disable muting of the auxiliary inputs**
- **Aux 2 feeds rear 4 seats.**
  - External switch in rear of aircraft to control Aux 2 muting

ICS

# Marker Beacon Receiver

3-lights: **O**uter, **M**iddle and **I**inner



Marker Modes

High	Sense
Low	Sense
Test	Lamps and receiver

Audio Selection

# Marker Beacon Operation

- Receiver always on.
- Select MKR for receiver audio.
- High sense until tone acquired.
  - Select low sense if desired to precise station crossing indication.
- Test function for lamps and audio circuits.

# PTT ICS

- **Push to talk intercom (PTT)**
  - For very noisy conditions
  - Only for pilot and copilot positions
  - Must install ICS PTT button at each position
- **PTT-Enable select switch on panel**
  - Forces IntelliVox squelch closed
  - Then use ICS PTT to be heard on intercom

# Night time dimming

- **The backlighting is adjusted by the aircraft dimmer OR**
  - Set at a fixed level at installation.
- **Annunciators and Marker lamps controlled by photocell on unit.**
  - The photodetector has a delay for smooth transition



# ProSupport Customer Care

- **Questions or Comments or Problems :**
  - Call PS Engineering at (423) 988-9800  
8:00 am to 5:00 p.m. Eastern time.
  - FAX: (423) 988-6619 any time
  - email: GUYICS@aol.com or  
intercoms@ps-engineering.com
- **3-Year warranty**
  - Replacement for first 12 months
  - Repair for following 24 months

⋮  
From all of us at PS Engineering. . .

**THANK YOU!**