AIR Control Display 57

Pilot's Manual

Important

Please read this manual carefully before using the device.

Observe limitations and safety instructions.

This manual is an essential portion of the device and must be kept in a safe place.

Articles Covered

This manual covers the following articles:

- ACD-57 "AIR Control Display 57"

Revision History

Rev.	Date	Status	Author	Changes	Approved
1.0	2017/04/06	Release	M. Förderer	Initial release	J. Garrecht
1.1	2017/06/27	Release	H. Hoeth	Revised list of limitations	J. Garrecht
1.2	2017/08/25	Release	H. Hoeth	Inactivity timeout in menus	J. Garrecht
				Squelch on/off button for Becker radios	
				Startup time of connected devices	
1.3	2018/01/19	–	H. Hoeth	Preset VFR squawk softkey	
				QNE softkey	
2.0	2018/03/29	Release	H. Hoeth	Update manual for SW version 0.42:	J. Garrecht
				Explain new features	
				Update softkey menu diagram	
				Emphesize 8.33 channel selection	
				Clarify transponder mode selection	

Product Support

If you have questions, our product support team will be happy to help you. Contact us via support@air-avionics.com or by phone. Please find details about our hotlines and availability online at *http://www.air-avionics.com*

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Getting Started

<div style="text-align: right">1</div>

1.1 Introduction

ACD-57 is a small multi-function control display intended for controlling ATC radar beacon systems (transponder, XPDR) and airborne VHF transceivers (COM). Furthermore the system is capable of determining and displaying a precise pressure altitude (altimeter). The system is connected to transponder and COM devices using standardized interfaces.

The small outline and multifunctional software of the device allow for better system integration in space constrained environments. The pilot-centered user interface aims at reducing crew workload, increasing crew efficiency and improving flight safety.
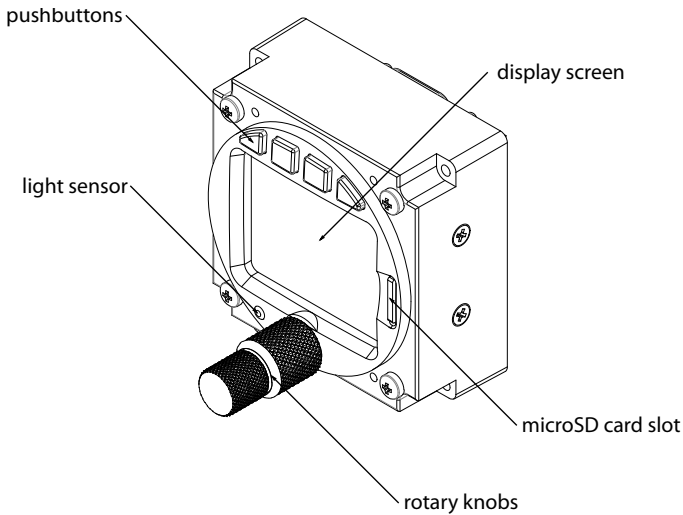

Figure 1.1.: ACD-57 front panel overview

1.2 Limitations and Safety Instructions

1.2.1 Safety

ACD-57 shall never distract from general practices of safe airmanship. Using ACD-57 may impose significant workload on the flight crew if not adequately familiar with ACD-57 and trained on its operation. In order to use ACD-57 effectively, familiarization with the unit is essential.

We recommend a thorough study of this manual and extensive familiarization on ground.

> Do not fly with ACD-57 if you are unfamiliar with its operation and limitations

Installations in which ACD-57 devices are used may be complex. Familiarization of specific installation conditions in an aircraft, for example the number, type, and configuration of connected systems is essential before using ACD-57.

ACD-57 installation requires several forms such as checkout forms and configuration logs to be filled out by installation personell. These documents are stored in the aircraft's documentation and are a viable resource for pilots who wish to study installation specifics of an ACD-57 in an aircraft.

1.2.2 Regulatory Requirements

It is the responsibility of those using this article to determine that the installation and working conditions are within required standards.

Independently from ETSO authorizations, depending on aircraft type and certification base, ACD-57 may not be suitable as a primary altimeter, COM control, or XPDR control unit.

1.2.3 Screen Shots

All screen shots used in this document are current at the time of publication.

Screen shots are intended to provide visual reference only. All information depicted in screen shots, including software file names, versions, and part numbers, is subject to change and may not be up to date.

1.2.4 Function Licensing and Database Expiry

Certain functionality is subject to a software licensing model and has to be unlocked during installation. This manual assumes that all required licenses have been installed during installation. Details can be found in the ACD-57 Installation Manual [1].

Some software features such as databases have expiration dates and may become unavailable as they expire. Validity is checked regularly. After the underlying database has expired, some functions may become unusable.

1.2.5   Liability

IN NO EVENT WILL AIR AVIONICS BE LIABLE FOR ANY INCIDENTAL, SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES, WHETHER RESULTING FROM THE USE, MISUSE OR INABILITY TO USE THE PRODUCT OR FROM DEFECTS IN THE PRODUCT.

1.2.6   Limitations

1. Using the alticoder of ACD-57 is limited to 40,000ft (FL400).

2. Using the altimeter of ACD-57 is limited to 40,000ft (FL400).

3. Use of the device is limited to class II aircraft (MRE, MTE and STE), which includes class I aircraft (SRE), both with MTOW of 6000 pounds or less as per definition of AC23.1309-1E.

4. Use of ACD-57 as primary and only altitude measurement device of the aircraft is excluded, if loss of functions or misleading information is assessed higher than Minor.

5. The operator must verify that the installation meets the airspace requirements where the flights are intended.

6. The device does not provide static error correction. Therefore installation is limited to aircraft where static error correction is not required.

1.2.7   Low Temperature Operations

If the temperature is below –10°C, the ACD-57 must be powered on at least 5 minutes before flight, in order to warm up the display.

1.3   Pilot Controls

Inner and outer knobs have 16 detents per revolution and can be rotated clockwise and counter-clockwise. The inner knob has a pushbutton. Four softkey pushbuttons are located on the bezel along the top of the TFT display screen.
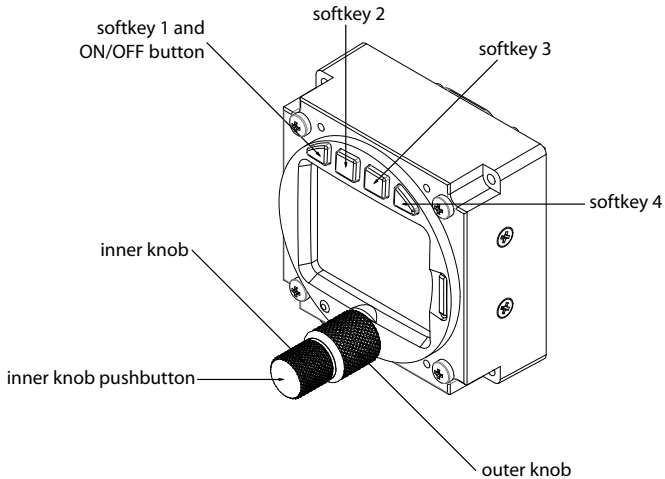
Figure 1.2.: ACD-57 pilot controls

1.3.1   Inner Knob Functions

- In the menu, the [inner knob] controls the position of the menu focus.
- On the main page, the [inner knob] opens the volume control page if a VHF transceiver is controlled.
- If only a Mode-S transponder system is controlled (and no VHF transceiver), on the main page, the [inner knob] opens the XPDR page.
- If only altimeter functions are used (and no VHF transceiver or XPDR is controlled), on the main page, the [inner knob] opens the barometric reference selection page.
- On the COM channel selection page, the [inner knob] goes through the channels in in 25kHz steps. To select 8.33kHz channels, push and turn the [inner knob].
- On the volume control page, the [inner knob] controls the ACTIVE channel volume.
- On text input pages, the [inner knob] controls the text character.

1.3.2   Inner Knob Pushbutton Functions

- On the main page, the [inner knob pushbutton] is used to toggle ACTIVE and STANDBY channels of a connected COM unit (short push) and for opening the menu (long push).

- In the Menu, the [inner knob pushbutton] is used for menu item execution/ENTER (short push), for toggling ON/OFF setting menu items (short push), or for closing the menu (long push).

1.3.3   Combined Inner Knob and Inner Knob Pushbutton Functions

By simultaneously pushing/holding the [inner knob pushbutton] and rotating the [inner knob], special functions are controlled.

- On the COM channel memory page, stored channels can be sorted.

- On the COM channel selection page, channels (kHz) are changed in the smallest increments[1].

1.3.4   Outer Knob Functions

- In the menu, the [outer knob] controls the position of the menu focus as well.

- On the main page, the [outer knob] opens the volume control page if a VHF transceiver is controlled.

- If only a Mode-S transponder system is controlled (and no VHF transceiver), on the main page, the [outer knob] opens the XPDR page.

- If only altimeter functions are used (and no VHF transceiver or XPDR is controlled), on the main page, the [outer knob] opens the barometric reference selection page.

- On the volume control page, the [outer knob] controls the STANDBY channel volume.

- On the COM channel tuning page, the [outer knob] controls the channel (MHz).

- On text input pages, the [outer knob] controls the input position (cursor).

1.3.5   Inactivity Timeout

The user interface consists of several different screen views (pages). If on any page (other than the main page or the configuration menu) no user input occurred for more than 10 seconds, the ACD-57 automatically switches back to the main page.

1.3.6   Softkeys

Four "softkey" pushbuttons are located on the top of the front bezel of the device. The softkey designators on top of the TFT display screen show the softkey's current function. Softkey functions change depending on menu level and context.

---

[1] Steps can be setup to *8.33kHz and 25kHz* and *8.33kHz* or *25kHz* only

softkey 1 (function "CNCL")

softkey 2,3,4 (currently no function assigned)
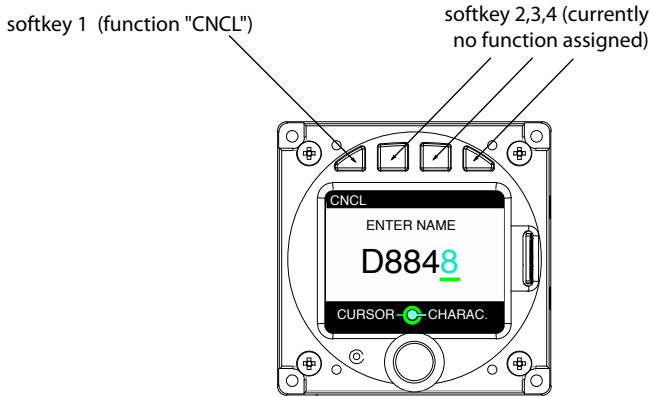
Figure 1.3.: Text input page. The leftmost softkey has a function (CNCL means cancel)

As an addition to its normal softkey functions, softkey 1 can be used for switching ACD-57 on or off with a long push. This function has to be activated by setting a configuration parameter during installation (not the default configuration).

1.3.7 Display Color Coding

If visible, all functions the outer knob controls are kept in the color *green*, all functions the inner knob controls are kept in the color *cyan*.
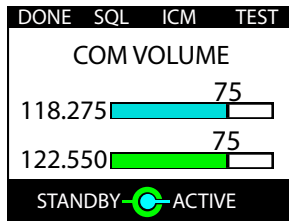
Figure 1.4.: COM volume control page. The inner knob always controls the cyan-colored elements, outer knob the green-colored elements.

1.3.8 Light Sensor

A sensor detecting ambient lighting conditions is placed on the left side of the concentric rotary knobs. User interface illumination, that is display backlight and softkey illumination, can be automatically adjusted using information from the light sensor. This function has to be activated by setting a configuration parameter during installation.

A filter is used to slow down changes in user interface illumination. This prevents the

illumination level from changing too quickly, for example when shadowing the sensor with your hands during operation of the knobs.

> If the user interface illumination is controlled by the aircraft's lighting bus, the ACD-57 uses the light sensor for plausibility checks to prevent blinding the flight crew at night. If the light sensor detects low ambient lighting conditions, but the lighting bus is set to a high brightness, the ACD-57 issues a warning and switches into manual illumination override mode. Details on the illumination override mode can be found in the section "Illumination Override" on page 31.

1.4 General Considerations

1.4.1 User Interface and Softkeys

The ACD-57 system software is configurable and can be adapted to the requirements of an individual installation. For example it is capable of interfacing and controlling different COM and XPDR systems from various manufacturers and optionally displaying altitude functions. Hence the user interface, softkey structure, and configuration menu are flexible and dynamic.

This manual covers the operation of COM control, XPDR control, and altimeter separately. Yet these functions can also be combined. Chapter 5 shows user interfaces for all combinations possible.

Appendix C holds a diagram of all available softkeys depending on device configuration.

1.4.2 Limitations of Connected Devices

Please be aware that not all functions supported by ACD-57 may be supported by connected COM devices. Carefully observe limitations and functions of connected COM devices in order to assess system limitations that apply to your aircraft. The following table gives an overview on functions not supported by all connectable COM systems and other limitations thereof:

Function	AIR COM VHF Transceiver	Becker 620X VHF Transceiver	DITTEL/TQ KRT2 VHF Transceiver
Say Again Function	●	–	–
Standby COM channel independent volume level possible	●	–	–
VHF transceiver system configuration during installation	●	●	–
Interface speed from ACD-57 to VHF transceiver	fast (nearly in real time)	normal (sometimes delays are recognizable)	slow (up to half a second delay)

1.4.3   Connected Devices Parameter Changes

Whenever a parameter in an external system such as a COM or XPDR device is changed, ACD-57 sends a change request to the COM or XPDR device through a data interface. Information is only updated on the display screen of the ACD-57 if the change has been acknowledged and transferred back to ACD-57 by the COM or XPDR device.

Therefore a delay (normally less than half a second) can be visible, depending on the type of the connected device, the data interface, and the parameters changed.

Some elements of the user interface, for example on the volume control page, present the value the parameter shall be changed to and the current value active in the connected system.
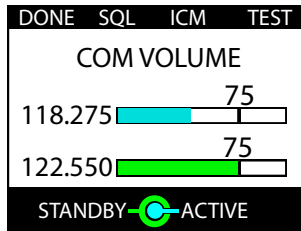
Figure 1.5.: Volume control page. The cyan colored bar indicates the value currently active in the connected COM unit, the little black pointer and numerical value show the value currently set in ACD-57. Normally this discrepancy disappears within half a second.

1.4.4   Connected Devices Startup Time

Some connected devices may need a significantly longer time than ACD-57 to power up. For example, a connected KRT-2 COM unit needs up to 20 seconds before it starts to send data to the ACD-57. While the ACD-57 is not yet receiving data from a connected system, the connected system's status is not known and therefore red crosses are shown on the parts of the display referring to the connected system.
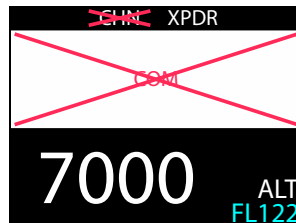
Figure 1.6.: No data from connected COM system after power up. This condition may last up to 30 seconds after power up.

1.5   Switching On and Off

1.5.1   Power On

By default the ACD-57 switches on automatically if sufficient supply power is present. ACD-57 switches on at 9V DC.

In order to switch ACD-57 on manually, *POWER ON MODE* can be deactivated in the *CONFIGURATION MENU*. For details, please consult the ACD-57 Installation Manual [1]. If *POWER ON MODE* is deactivated and if the ACD-57 has been manually switched off before, ACD-57 is powered on by pushing $\boxed{\text{softkey 1}}$ for at least 0.5 seconds.

The boot phase of ACD-57 takes less than one second. No special boot screen is shown.

When turned on, ACD-57 powers up all connected avionics systems (such as COM or XPDR) if they have not been powered up already.

1.5.2   Power Off

If *POWER ON MODE* is active (default), ACD-57 is switched off by taking away power. ACD-57 switches off if the supply voltage drops below 8V DC. In this mode, ACD-57 can not be switched off manually using $\boxed{\text{softkey 1}}$.

If *POWER ON MODE* is deactivated, push $\boxed{\text{softkey 1}}$ longer than 4 seconds to switch ACD-57 off.

```
┌─────────────────────────────┐
│                             │
│        INFORMATION          │
│                             │
│       POWER OFF 3           │
│                             │
│                             │
└─────────────────────────────┘
```
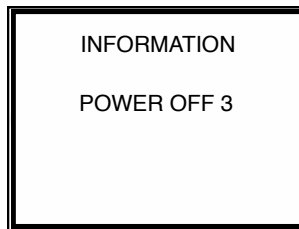
Figure 1.7.: Power off screen. The countdown timer on the right (here 3 seconds) counts down until the unit is switched off.

2 | COM Operation

2.1 Introduction

ACD-57 is capable of controlling a connected VHF transceiver (COM). ACD-57 can serve as primary means for control of a COM unit including COM unit setup, channel selection, and audio control.

Multiple ACD-57 can be installed on one COM unit and control the COM unit simultaneously. This is especially used in large aircraft or aircraft with tandem seating configurations.

2.1.1 COM User Interface
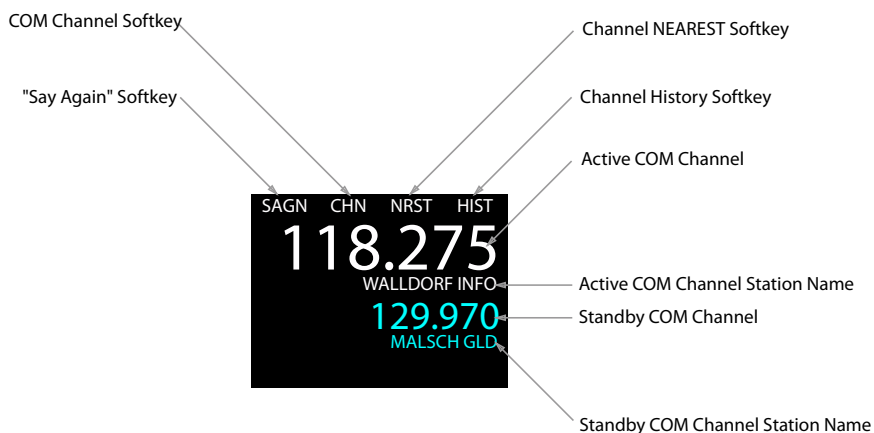
Figure 2.1.: COM user interface on main page explained.

ACTIVE and STANDBY channels are displayed on the main page.

Depending on configuration and database/position availability, channel names may be displayed on the main page. The nearest station name will be shown for the selected channel.

> Station names are only shown for stations within a distance of approx. 20 miles from the aircraft's current position.

The display of station names in ACD-57 requires GPS position data from an external source that needs to be connected and configured during installation. Furthermore a valid station database (microSD card) is required. If no GPS position data or no station database is present, the function is not available and station names are not shown.

2.2   Audio Control

2.2.1   Volume Control

To enter the volume control page, rotate the (inner knob) or the (outer knob) on the main page.

In the volume control page, you can use the (inner knob) to adjust ACTIVE channel volume. Use the (outer knob) to adjust STANDBY channel volume.
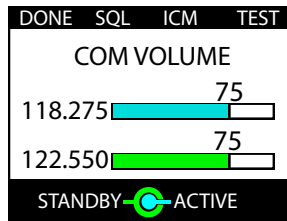
Figure 2.2.: Volume control page

If the connected COM unit does not support individual volumes for ACTIVE and STANDBY channel (Dittel/TQ KRT2 or Becker 620X), (outer knob) switches DUAL/SCAN mode on or off.
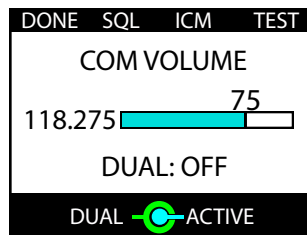
Figure 2.3.: Volume control page for KRT2 COM unit. (outer knob) switches DUAL mode on or off.

On the volume control page, as long as pushed the (TEST softkey) will open the squelch for some seconds in order to test the audio output. Testing the audio output before each flight is recommended.

If the *KNOB USE* parameter in the configuration menu is set to *CHANNEL*, rotating the knobs changes channels. To access the volume control page in this configuration, please push the [VOL softkey] on the main page. Details on the *KNOB USE* parameter can be found in the section "Knob Use" on page 35.

2.2.2   Monitoring the STANDBY COM Channel

The STANDBY COM channel monitoring function (also known as "DUAL WATCH" or "SCAN") is always active, when the STANDBY channel volume is set to a value above zero. If set to zero, the STANDBY COM channel monitoring is deactivated.

Some COM units (currently only DITTEL/TQ KRT2) do not support individual values for the volume of the standby COM channel. If such a COM unit is used, the volume value for the standby COM channel is synced with the value for the active COM channel. In this case, rotating the [outer knob] only activates or deactivates standby COM channel monitoring entirely.

2.2.3   Squelch Level Control

The squelch level control page is accessed by pushing the [SQL softkey] on the volume control page. It is recommended to keep the squelch level at the lowest value required for filtering white noise.

If the connected COM system doesn't completely open the squelch at the "zero" setting (e.g. Becker radios), the squelch can be turned on and off with the [softkey 4].
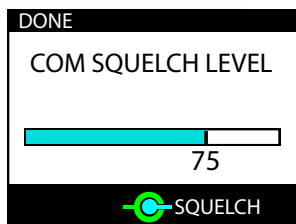
Figure 2.4.: Squelch control page

2.2.4   Intercom Control

The intercom control page can be accessed by pushing the [ICM softkey] on the volume control page.

Intercom volume and intercom VOX level can be individually configured. Intercom volume is the audio volume of the intercom audio output. Intercom VOX level is the sound level at which the intercom function is engaged / opened.

Use the [inner knob] to adjust intercom volume and the [outer knob] to adjust intercom VOX level.
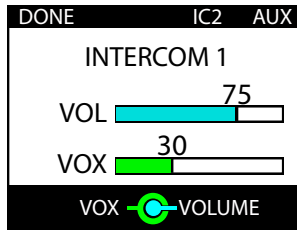
Figure 2.5.: Intercom control page

If the connected COM system features two independent intercoms, the second intercom can be accessed by psuhing the [IC2 softkey] softkey.

2.2.5   AUX Volume Control

Aux volume can be individually adjusted. The aux input can for example be used to connect an audio player, mobile phone, or external avionics system to the connected COM unit.

The aux input level control page can be accessed by pushing the [AUX softkey] on the intercom control page.
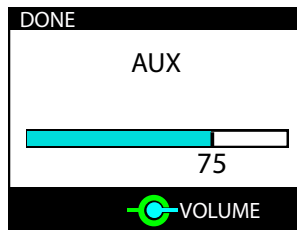
Figure 2.6.: Aux input level control page

2.3   Selecting a COM Channel

Channel selection always selects the STANDBY channel. In order to change the ACTIVE channel, the STANDBY and ACTIVE channel must be toggled.

2.3.1   Toggling STANDBY and ACTIVE Channel

To switch between ACTIVE and STANDBY COM channel (toggle), push the [inner knob pushbutton] on the main page.

2.3.2   Manual Channel Selection

To open the channel selection page, push the [CHN softkey].

If the *KNOB USE* parameter in the configuration menu is set to *CHANNEL*, you can rotate the (inner knob) or the (outer knob) on the main page to access the channel selection page. Details on this parameter can be found in the section "Knob Use" on page 35.

CNCL   NRST   MEM   HIST
SBY COM CHANNEL
118.275
WALLDORF INFO
MHz ──◯── kHz

Figure 2.7.: Channel Selection Page

1. To open the channel selection page, push the (CHN softkey) on the main page.

2. To select a channel, use the (inner knob) for kHz selection and the (outer knob) for MHz selection.

3. Push the (inner knob pushbutton) to execute the channel selection and to exit the channel selection page to the main page.

You can exit the selection process, discard the selection, and return to the main page by pushing the (CNCL softkey).

The (inner knob) always uses 25kHz steps for faster channel selection. To change the channel in 8.33kHz increments, you can push the (inner knob pushbutton) and simultaneously turn the (inner knob).

2.4   Nearest and History Functions

2.4.1   Nearest Station Selection

The selection of nearest stations in ACD-57 requires GPS position data. Furthermore an installed station database (microSD card) is required. If no GPS position is available or no database is installed, the function is not available and the (NRST softkey) is not shown.

The nearest station list can be opened by pushing the (NRST softkey). The (NRST softkey) is available on the channel selection page. In COM-only configuration, the (NRST softkey) is also available on the main page.

1. To open the channel selection page, push the (CHN softkey) on the main page.

2. To access the NEAREST station list, push the (NRST softkey).

3. Use the (inner knob) to select a station.

4. Push the ⌊inner knob pushbutton⌋ to select the channel of the selected station and to exit the channel selection page to the main page.

```
ESC
    WALLDORF INFO
  HOCKENHEIM INFO
  HERRENTEICH INFO
    SPEYER INFO
    MALSCH INFO
```

Figure 2.8.: NEAREST station list

You can exit the selection process, discard the selection, and return to the last page by pushing the ⌊ESC softkey⌋.

2.4.2   Channel History

ACD-57 stores a history of selected channels in a recently-selected-channels list. Channels can be selected from this list.

The channel history list can be opened by pushing the ⌊HIST softkey⌋. The ⌊HIST softkey⌋ is always available on the channel selection page. In COM-only configuration, the ⌊HIST softkey⌋ is also available on the main page.

1. To open the channel selection page, push the ⌊CHN softkey⌋ on the main page.

2. To access the history list, push the ⌊HIST softkey⌋.

3. Use the ⌊inner knob⌋ to select a channel from the recently-selected-channels list.

4. Push the ⌊inner knob pushbutton⌋ to execute the channel selection and to exit the channel selection page to the main page.

```
ESC
     118.275
     123.650
     129.975
     118.150
     119.800
```

Figure 2.9.: Channel History List

You can exit the selection process, discard the selection, and return to the last page by pushing the ⌊ESC softkey⌋.

2.5   Channel Memory

ACD-57 features a user-configurable channel memory. Fifteen COM user channels can be saved including an optional text name/identifier.

2.5.1   Select a Channel from Memory

The channel memory list can be opened by pushing the MEM softkey . The MEM softkey is available on the channel selection page.

1. To open the channel selection page, push the CHN softkey on the main page.

2. To access the memory list, push the MEM softkey on the channel selection page.

3. Use the inner knob to select a position / identifier from the memory list.

4. Push the inner knob pushbutton to execute the selection and to exit to the main page.

```
 ESC    EDIT    ADD    DEL
            COMP 1
         SWEET HOME
             ATIS
           GROUND
             TEAM
```
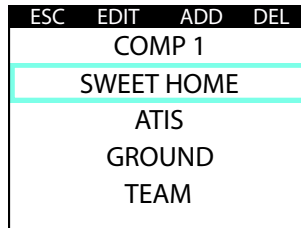
Figure 2.10.: Channel memory list

You can exit the selection process, discard the selection, and return to the last page by pushing the ESC softkey .

2.5.2   Store a Channel in Memory

1. To store a channel, enter the channel memory list and push the ADD softkey .

2. Select the desired channel using the inner knob (kHz) and outer knob (MHz). Push the inner knob pushbutton to execute the channel selection and to get to a text input page where you can enter an identifier for the stored channel.

3. Use the outer knob to select a position in the text and the inner knob to select a character. Push the inner knob pushbutton to execute the identifier text input and to store the channel to the memory list.
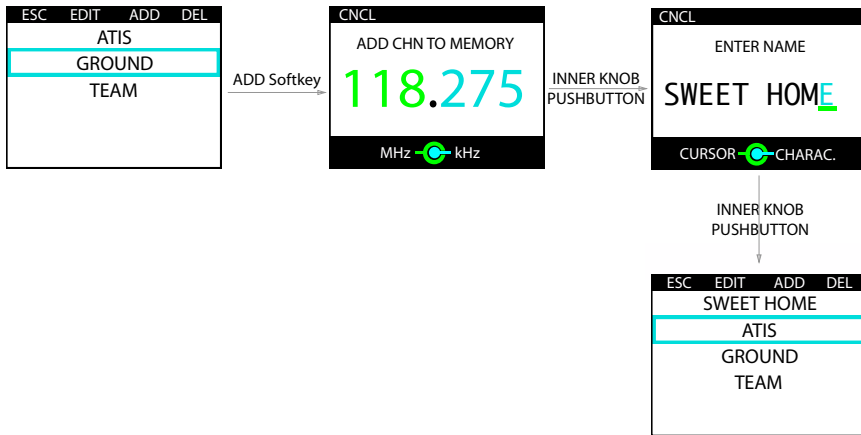
Figure 2.11.: Channel storing process in channel memory list

You can undo the storing process and return to the last page by pushing the CNCL softkey .

2.5.3 Editing a Stored Channel

1. To edit a stored channel, enter the channel memory list, use the inner knob to select a position/identifier, and push the EDIT softkey to edit the selected position/identifier.

2. Select the desired channel by using the inner knob (kHz) and outer knob (MHz). Push the inner knob pushbutton to execute the channel selection and to get to a text input page where you can edit the name for the stored channel.

3. Use the outer knob to select a position in the name and the inner knob to select a character. Push the inner knob pushbutton to execute the name selection and to store the channel in the memory list.

Figure 2.12.: Channel editing process in channel memory list

You can undo the selection/editing process and return to the main page by pushing the CNCL softkey .

2.5.4 Sorting the Channel Memory List

1. To sort the channel memory list, enter the channel memory list, use the inner knob to select a position/identifier that shall be repositioned in the list.

2. Push the inner knob pushbutton , hold and simultaneously rotate inner knob to move the position/identifier within the list.

3. Release the inner knob pushbutton as soon as the position/identifier is in the desired place in the list.

2.5.5 Deleting a Stored Channel

1. To delete a stored channel, enter the channel memory list, use the inner knob to select a position, and push the DEL softkey to delete the selected position.

The position is instantly deleted, there is no way to undo the process.
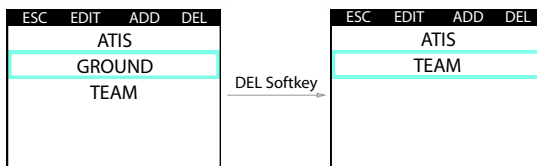
Figure 2.13.: Channel deletion process in channel memory list

2.6   RX/TX Indication and Stuck PTT Function

2.6.1   RX/TX Indication

The current receiver/transmitter status is shown on the main page. If radio messages are sent or received, a little indicator is shown.
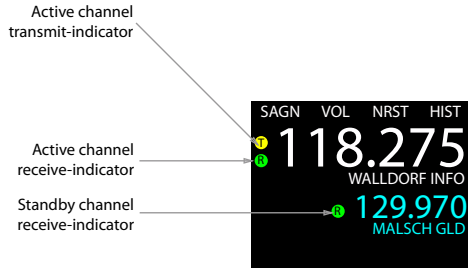
Figure 2.14.: RX and TX indicators explained

2.6.2   Last RX Indication

To indicate the channel on which the last transmission was received, a little indicator is shown next to that channel for a duration of 50 seconds after the end of the last incoming transmission or until another transmission is received.
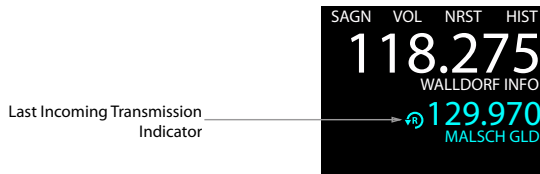
Figure 2.15.: Last RX indicator

2.6.3   Stuck PTT Indication

If the connected COM unit features a "stuck PTT detection" or a "stuck PTT timeout", the status of a "stuck PTT" being detected is indicated on the main page by a crossed-out transmitter symbol as shown below or by an COM error message (depending on the type of the connected COM device).

STUCK PTT
indicator

Figure 2.16.: Stuck PTT indicator

2.7   Say Again Function

If the connected COM unit features a recording or "say again"-function, the function is accessed through the [SAGN softkey] on the main page.

If the [SAGN softkey] on the main page is pushed (short push), the last recorded transmission is replayed. A replay indicator appears on the main page while the replay is active.

Replay Indicator
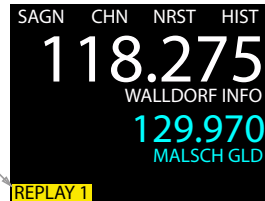
Figure 2.17.: [SAGN softkey] has been pushed, replay function is active

> The replay can be interrupted by a received transmission. Actual transmissions normally have priority. This however depends on the setup of the connected COM system. Please inform yourself on ground about the configuration and behavior of the connected COM system before using the function in flight.

ACD-57 supports replay of several transmissions (depends on capacity of connected COM system). By pushing the [SAGN softkey] again, you can replay earlier transmissions. The number on the replay indicator shows the current position.
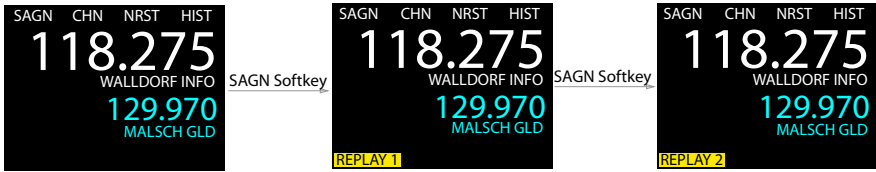
Figure 2.18.: [SAGN softkey] has been pushed, replay function is active and [SAGN softkey] is pushed again to replay an earlier transmission.

3 | XPDR Operation

3.1 Introduction

ACD-57 is capable of controlling a connected XPDR unit. ACD-57 can serve as primary means for control of a XPDR unit including XPDR unit setup, squawk code selection and mode control.

Multiple ACD-57 can be installed on one XPDR unit.

Familiarization of specific installation conditions in an aircraft, e.g. number of connected devices and topology is recommended before using ACD-57.

3.1.1 XPDR user interface

Squawk code[1], XPDR mode and transferred altitude (i.e. the altitude sent out by the connected XPDR system when replying) are displayed on the main page. Additionally a reply indicator shows if the transponder is currently replying to an interrogation.
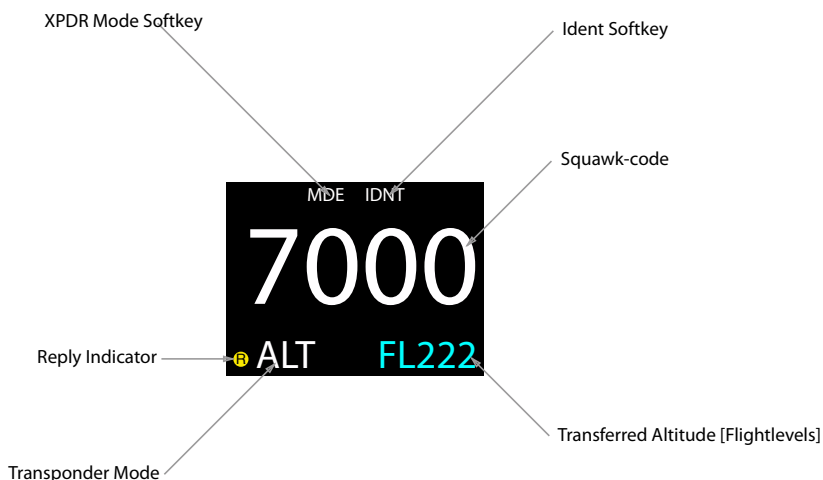
Figure 3.1.: XPDR user interface on Main Page

---

[1] "Squawk Code" here refers to the ATCRBS 4096 reply code. Details on the terminus "squawk" can be found here: https://en.wikipedia.org/wiki/Transponder_(aeronautics)

3.2   Selecting a Squawk Code

To enter the XPDR page, rotate the (inner knob) or the (outer knob) on the main page (in XPDR-only configuration) or push the (XPDR softkey) (in a configuration with VHF transceiver and XPDR).

1. on the main page, rotate the (inner knob) or push the (XPDR softkey) to enter the XPDR page.

2. Use the (outer knob) to select a position in the squawk code and use the (inner knob) to adjust the selected position's value.

3. Push the (inner knob pushbutton) to execute the selected squawk code and to exit to the main page.

Alternatively, you can use the (softkey 2) to toggle between the preset VFR squawk and the last non-VFR squawk. Then push the (inner knob pushbutton) to confirm the squawk code.

You can undo the squawk code selection and return to the main page by pushing the (CNCL softkey)
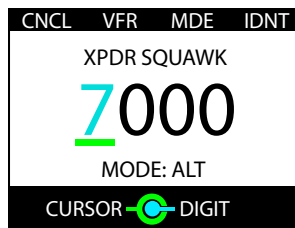
Figure 3.2.: XPDR page: Squawk code selection and other options for the transponder

3.3   Using the Ident Function

Push the (IDNT softkey) to initiate the ident function. This also confirms the currently selected squawk code. The (IDNT softkey) is always available on the XPDR page. In XPDR-only configuration, the (IDNT softkey) is also available on the main page.

IDENT Indicator
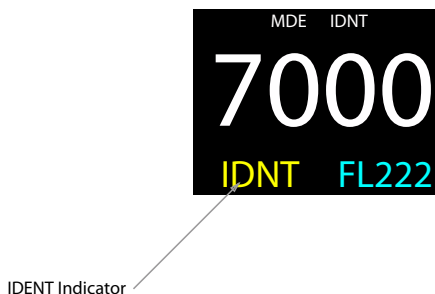
Figure 3.3.: Ident function is active. *IDNT* is shown instead of the normal mode indication as long as the ident feature is active.

3.4   Changing XPDR Mode

ACD-57 supports selection of the following XPDR Modes by the flight crew:

- SBY – XPDR is inactive. In this mode it does not draw power.
- ALT – Active Mode, also called "Altitude Mode". This is the normal mode in flight.
- ON – Alt Inhibit Mode, no altitude data is transmitted.

3.4.1   Normal Mode Selection

A short push on the ⌊MDE softkey⌋ switches between SBY (Standby Mode) and ALT (Active Mode). It also confirms the currently selected squawk code. The ⌊MDE softkey⌋ is always available on the XPDR page. In XPDR-only configuration, the ⌊MDE softkey⌋ is also available on the main page.
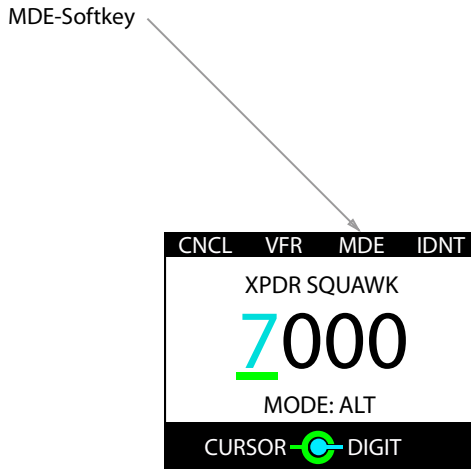
MDE-Softkey

Figure 3.4.: [MDE softkey] on the XPDR page

3.4.2   Altitude Inhibit Mode

A long push on the [MDE softkey] switches to ON (ALT Inhibit Mode). In this mode, no altitude information is transmitted.

The use of this mode is only recommended if requested by air traffic control.

Another long push on the [MDE softkey] switches from ON (ALT Inhibit Mode) to SBY (Standby).

3.4.3   GND Mode

GND mode (All Call Inhibit Mode) is an optional, special XPDR mode that is automatically engaged if the aircraft is on ground. The installation and correct configuration of an On-Ground-Switch is required. To indicate this mode, a special GND flag is shown.
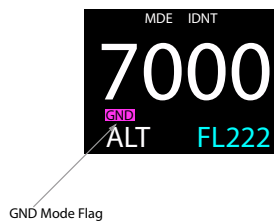
GND Mode Flag

Figure 3.5.: GND mode flag. On-Ground-Switch is required. Due to regulatory requirements, GND mode can not be selected manually.

4 Altimeter Operation

ACD-57 is capable of determining and displaying a precise pressure altitude and can be used as primary means of altimetry.

4.1 Altimeter User Interface

The current altitude is displayed numerically and with a tape-style indicator, or trend indicator. Depending on device configuration and other display content, the size of the altitude display may vary.
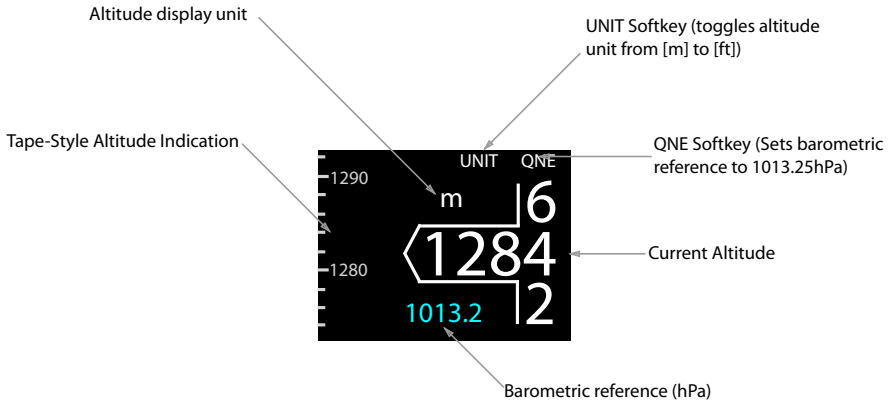
Figure 4.1.: Altimeter user interface

Units to display altitude and barometric pressure are user configurable. Altitude can be displayed in feet or meters, barometric pressure can be displayed in inches mercury or hectopascals (which equals millibars).

4.2 Adjusting Barometric Reference

To enter the barometric reference selection page, rotate the (inner knob) or the (outer knob) on the main page (In altimeter-only configuration) or push the (BARO softkey) (if additionally a VHF transceiver and/or a XPDR is controlled).

1. on the main page, rotate the (inner knob) or push the (BARO softkey) to enter the barometric reference selection page.
2. Use the (inner knob) and (outer knob) to adjust the current barometric reference.

3. Push the [inner knob pushbutton] to save the setting and to exit to the main page.

UNIT Softkey (toggles altitude
units between [ft] and [m])

QNE Softkey (Sets barometric
reference to 1013.25hPa)

Cancel Softkey

barometric reference

Resulting Altitude
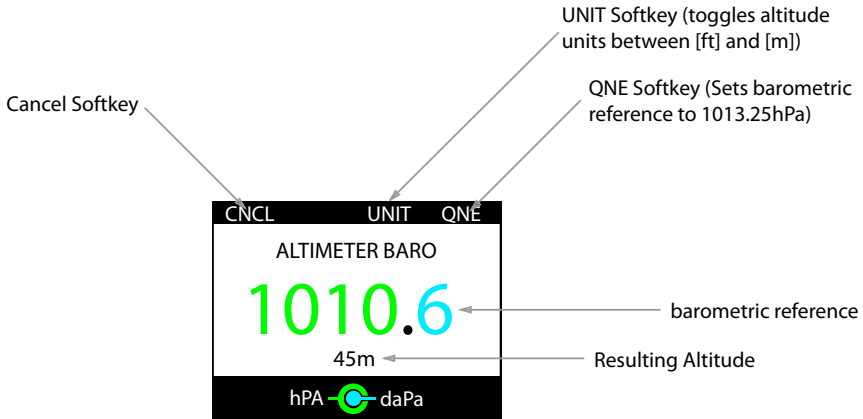
Figure 4.2.: Barometric reference selection page

The [QNE softkey] can be used to set the barometric reference to standard pressure (1013.25 hPa or 29.92 inHG). If the altimeter is already set to standard pressure, the [softkey 4] will instead show the last non-standard barometric reference, so that the pilot can quickly toggle between standard pressure and some other reference.

4.3   Altitude Display Unit

With the [UNIT softkey] it is possible to toggle quickly between feet and meters as altitude display unit.

5 | Combined Functions

ACD-57 can be used to control a VHF transceiver and an ATC Radar Beacon System (XPDR) at the same time. Additionally it can display altitude. Any combination of these three functions is possible and depends on configuration and connected subsystems.

5.1   COM, Transponder, and Altimeter Combined

COM Channel softkey

"Say Again" softkey

Transponder (XPDR) softkey

BARO softkey

Active COM channel

SAGN   CHN   XPDR   BARO

118.275

122.550

Standby COM channel

Altitude display unit

Current altitude

Altitude trend indicator

ft

30

22220

10

7000

ALT

FL222

1013.2

Transponder squawk-code

Transponder mode (Altitude)

Barometric reference

Transponder transmitted altitude
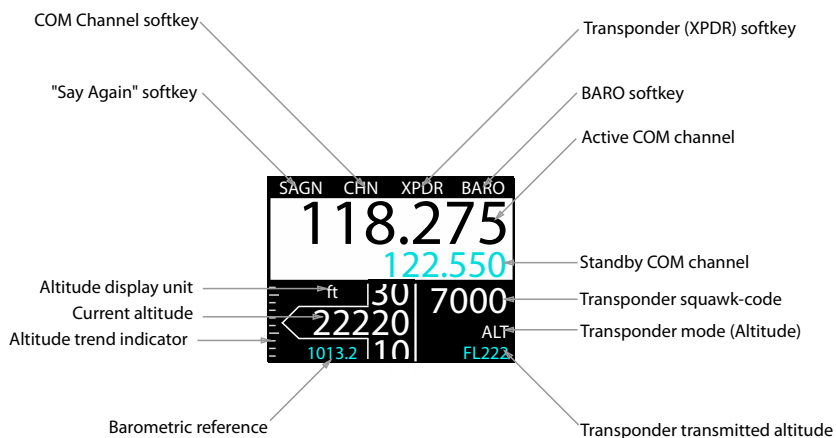
Figure 5.1.: User interface with COM, transponder, and altimeter functions combined.

5.2   COM and XPDR Combined

COM Channel Softkey

"Say Again" softkey

Transponder (XPDR) softkey

Active COM channel

SAGN   CHN   XPDR

118.275

122.550

Standby COM channel

7000   ALT
FL222

Transponder mode (Altitude)

Transponder squawk-code

Transponder transmitted altitude
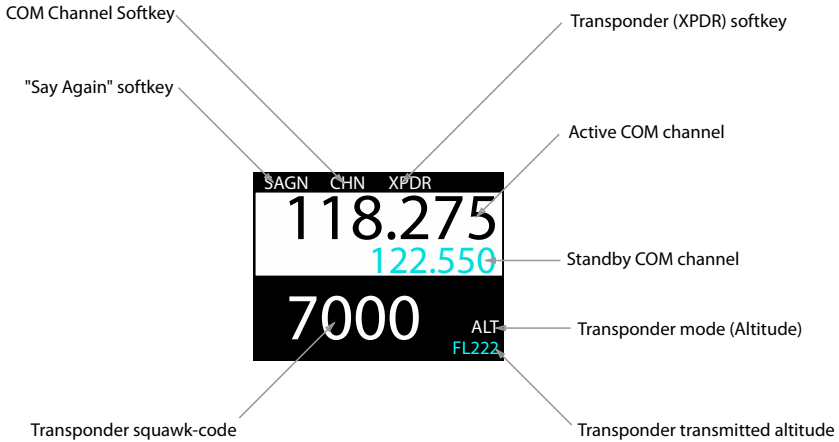
Figure 5.2.: User interface with COM and transponder functions combined.

5.3   COM and Altimeter Combined

COM Channel Softkey

"Say Again" Softkey

BARO Softkey

SAGN   CHN   BARO

Active COM Channel   **118.275**

122.550

Standby COM Channel

Altitude display unit   ft

Current altitude

Tape-style altitude indication

22250   **22220**

22200

1013.2

Barometric reference
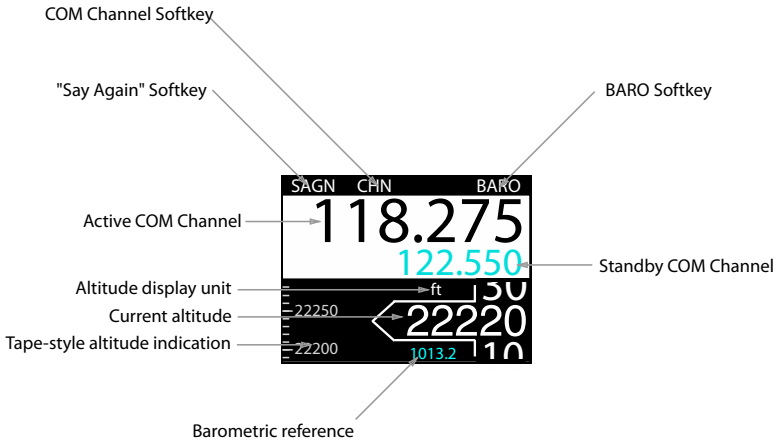
Figure 5.3.: User interface with COM and altimeter functions combined.

5.4 XPDR and Altimeter Combined
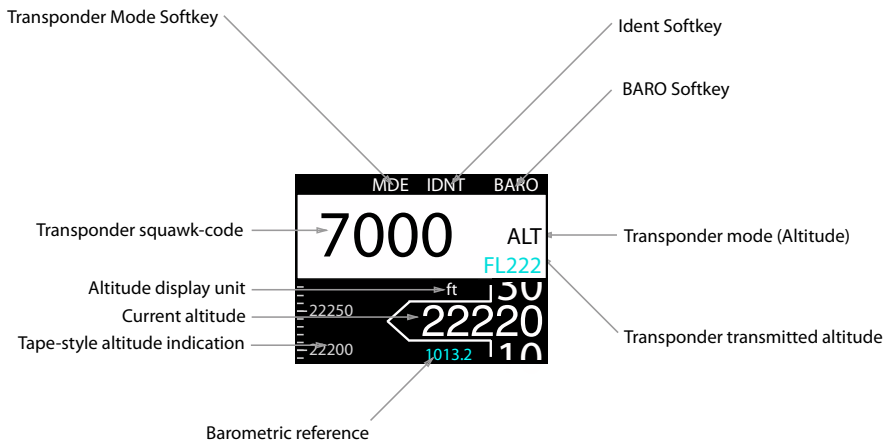
Figure 5.4.: User interface with transponder and altimeter functions combined.

6

6.1 Configuration Operations

6.1.1 Configuration Menu

ACD-57 is configured in the configuration menu. To enter the configuration menu, push the ⌈inner knob pushbutton⌋ for at least 2 seconds (long push). The menu contains several configuration options and informations about ACD-57 and connected systems.

Please find a menu diagram in appendix B

6.1.2 Pin Code Protection

This manual contains only a few configurable parameters. These parameters are always accessible to the flight crew. The ACD-57 has many more configurable parameters and a large configuration menu. Due to safety reasons and regulatory requirements, not all configuration parameters are readily accessible. Many configuration menu levels require the entry of a pin code before they can be accessed. Pin codes can be entered in *CONFIGURATION MENU → PIN CODE*.

For a detailed overview of all configurable parameters and their recommended values, please consult the ACD-57 installation manual.

6.2 Device Configuration

In the configuration menu, *DEVICE* contains information about the ACD-57 device itself.

6.2.1 Info

In the *DEVICE* menu, *INFO* contains specific information about the ACD-57 device such as hardware and software version information.

6.2.2 Status

In the *DEVICE* menu, *STATUS* contains information about the power supply voltage, the position data source, and the pressure data source.

6.2.3 Illumination Override

In the *DEVICE* menu, *ILLUMIN OVERRIDE* the current display and knob illumination level can be manually set.

Until the next restart of the ACD-57, this setting overrides the current illumination configu-

ration that has been entered during device installation. After a restart, the illumination configuration that has been entered during installation is restored.

To override the illumination configuration, please carry out the following steps:

1. Open the menu with a long push on the (inner knob pushbutton).

2. Use the (inner knob) to navigate to *DEVICE → ILLUMIN OVERRIDE*

3. Once the illumination override page is entered, the illumination configuration is shown. Use the (inner knob) to override the illumination configuration and to enter a manual value.

4. Push the (inner knob pushbutton) to execute your selection.

5. Push the (ESC softkey) to leave the menu.

To reset the override and get back to the illumnation configiuration entered during installation, push the (RESET softkey).
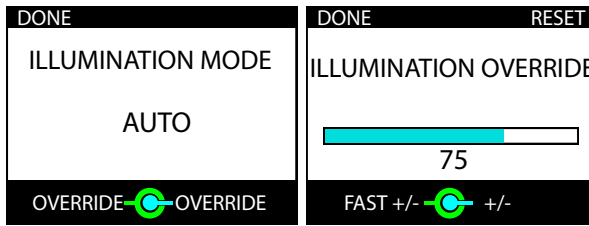
Figure 6.1.: Illumination override page. On the left the automatic illumination configuration is active, current illumination mode is shown. On the right the override is active.

6.3   Altimeter Configuration

The *ALTIMETER* menu section contains specific configuration parameters for the integrated altimeter.

6.3.1   Units

Units for altitude and pressure are user configurable.

- Altitude units configurable to meters or feet
- Pressure units configurable to hectopascals (millibars) or inches of mercury

The default settings are *meters* and *hectopascals*. To change the altimeter units configuration, please carry out the following steps:

1. Open the menu with a long push on the ⸤inner knob pushbutton⸥.
2. Use the ⸤inner knob⸥ to navigate to *ALTIMETER → UNITS*.
3. Use the ⸤inner knob⸥ to navigate to a unit category, use the ⸤inner knob pushbutton⸥ to enter the menu.
4. Use the ⸤inner knob⸥ to select the desired unit.
5. Push the ⸤inner knob pushbutton⸥ to execute your selection.
6. Push the ⸤ESC softkey⸥ to leave the menu.

6.4 ACD-57 COM Control Configuration

The *COM CONTROL* menu section contains setup parameters for the control of a connected COM system.

6.4.1 Channel Spacing

The current channel spacing used in the ACD-57 can be selected in this parameter. It can be set to both, 25kHz, or 8.33kHz. If set to 25kHz, on the channel selection page, one inner knob rotation increment will change kHz in 25kHz steps. If set to 8.33kHz, one inner knob rotation increment will select every third channel (25kHz increments), and simultaneously pushing the inner knob pushbutton and rotating the inner knob will change kHz in 8.33kHz steps. If set to *BOTH*, all channels (those in the 8.33kHz channel definition and 25kHz frequencies) are selectable. The default setting for this parameter is *BOTH*.

> This parameter only sets the displayed channel naming in ACD-57. It does not affect physical frequencies or separation transferred to the connected COM system.

To change the channel spacing configuration, please carry out the following steps:

1. Open the menu with a long push on the inner knob pushbutton .
2. Use the inner knob to navigate to *COM CONTROL* → *CHN SPACING*.
3. Use the inner knob to select a desired spacing (*BOTH*, *25kHz*, or *8.3kHz*).
4. Push the inner knob pushbutton to execute your selection.
5. Push the ESC softkey to leave the menu.

6.4.2 Station Names

This parameter can be switched to *ON* in order to show station names on the main page of the COM user interface. If set to *OFF*, station names are not shown on the main page, but are still shown and used on other pages. The default setting for this parameter is *ON*.

> The display of station names in ACD-57 requires GPS position data and an installed station database (microSD card). If no GPS position data or no station database is available, station names are not shown and position based radio channel selection is disabled.

> Station names are only shown for stations within a distance of approx. 20 miles from the aircraft's current position.
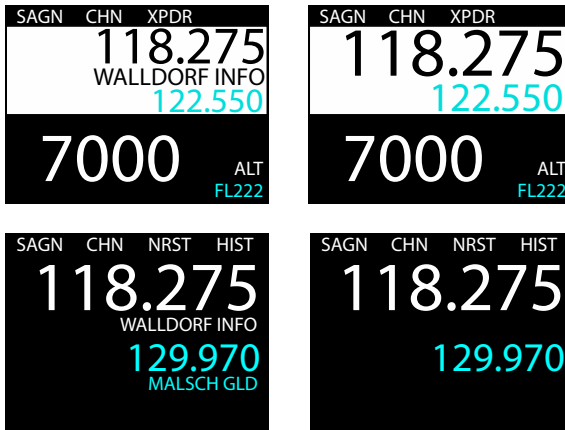
Figure 6.2.: COM main page with *STATION NAMES* parameter set to *ON* on the left and to *OFF* on the right. Please note that in COM only configuration, station names for both standby and active channel are shown. In all other configurations, only the active channel station name is shown.

To change this configuration, please carry out the following steps:

1. Open the menu with a long push on the [inner knob pushbutton].
2. Use the [inner knob] to navigate to *COM CONTROL → STATION NAMES*.
3. Push the [inner knob pushbutton] to toggle between YES and NO.
4. Push the [ESC softkey] to leave the menu.

6.4.3 Knob Use

With this parameter the primary use of the [inner knob] and [outer knob] on the main page can be selected. The [inner knob pushbutton] function remains unaffected of this setting (always toggles active/standby channels). The default setting for this parameter is *VOLUME*.

It can be set to *VOLUME* in order to open the volume control page when turning the [inner knob] or the [outer knob]. In this case [softkey 2] will have the function to open the channel selection page.

It can also be set to *CHANNEL* in order to open the channel selection page when turning the [inner knob] or the [outer knob]. In this case [softkey 2] will have the function to open the volume control page.

SAGN	CHN	NRST	HIST

118.275
WALLDORF INFO
129.970
MALSCH GLD

SAGN	VOL	NRST	HIST

118.275
WALLDORF INFO
129.970
MALSCH GLD
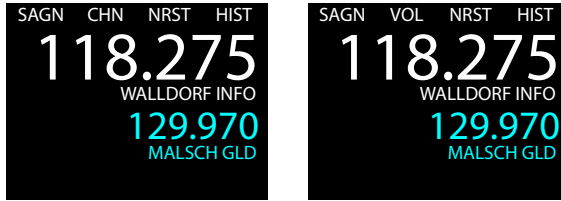
Figure 6.3.: COM main page with *KNOB USE* parameter set to *VOLUME* on the left and to *CHANNEL* on the right.

In aircraft with no audio panel or intercom, we recommend to use the default setting (*KNOB USE* set to *VOLUME*). If an audio panel/intercom is used, it may not be required to change COM volume frequently. In this case, setting the *KNOB USE* parameter to *CHANNEL* is recommended for easier channel selection.

To change the knob use configuration, please carry out the following steps:

1. Open the menu with a long push on the [inner knob pushbutton].

2. Use the [inner knob] to navigate to *COM CONTROL → KNOB USE*.

3. Use the [inner knob] to to select a desired option (*VOLUME* or *CHANNEL*).

4. Push the [inner knob pushbutton] to execute your selection.

5. Push the [ESC softkey] to leave the menu.

6.5 Connected COM System Configuration

The *COM SYSTEM* section contains setup parameters for a connected VHF transceiver. Depending on the type of connected VHF transceiver, different parameters are available. Where possible, menu parameter names are consistent to parameter names in the VHF transceiver's documentation.

> Please note that in dual ACD-57 installations that if a Becker 620X or Dittel/TQ KRT2 is controlled, the *COM SYSTEM* menu section is only available on the display the VHF transceiver is directly connected to.

Please consult the VHF transceiver's documentation for details on parameters and recommended values.

6.6 ACD-57 XPDR Control Configuration

The *XPDR CONTROL* section contains setup parameters for the control of a connected XPDR system.

6.6.1 VFR Preset

Here a preset value for the VFR squawk code can be entered. This value is used when the *VFR Softkey* is pressed on the XPDR page.
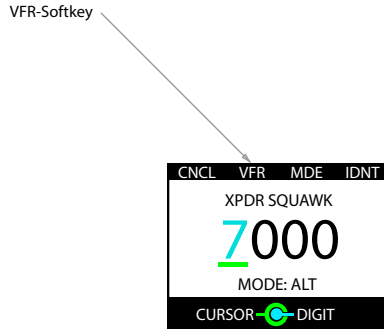
Figure 6.4.: VFR softkey on the XPDR page. The squawk code entered in the *VFR PRESET* parameter is set if the softkey is pushed.

To change the VFR squawk code preset, please carry out the following steps:

1. Open the menu with a long push on the inner knob pushbutton .
2. Use the inner knob to navigate to *XPDR CONTROL → VFR PRESET*.
3. Use the outer knob to select a position/digit and the inner knob to change the value at this position.
4. Push the inner knob pushbutton to execute your selection.
5. Push the ESC softkey to leave the menu.

6.7   Connected XPDR System Configuration

The *XPDR SYSTEM* section contains setup parameters for a connected XPDR system. Please consult the XPDR system's documentation for details on parameters and recommended values.

Note that for the VT-01, the system state, software versions, and configuration is not known to the ACD-57 unless the VT-01 has been set to ALT mode at least once during the runtime of the ACD-57.

6.7.1   Flight ID

In this menu, a flight ID can be entered. The flight ID must correspond to the aircraft identification specified in item 7 of the ICAO flight plan, or, when no flight plan has been filed, the aircraft registration.

To enter a flight ID, please carry out the following steps:

1. Open the menu with a long push on the (inner knob pushbutton).
2. Use the (inner knob) to navigate to *XPDR SYSTEM → FLIGHT ID*.
3. Use the (outer knob) to select a position/digit and the (inner knob) to change the value at this position.
4. Push the (inner knob pushbutton) to execute your selection.
5. Push the (ESC softkey) to leave the menu.

7 | Software and Station Database Updates

7.1   Version Identification

The software version can be reviewed in *CONFIGURATION MENU → DEVICE → INFO*.

7.2   Software/Database Loading

Software updates and the station database are loaded using the integrated microSD card slot and a microSD memory card.

While the software is actually loaded onto the device, the station database remains on the microSD card. Therefore database information is only accessible if the microSD card is installed.

If the microSD card is not installed, database functions will not be available.

Never remove the microSD card while the device is in operation. If the microSD card is removed from the device during runtime, the device's software may stop working. In this case a system restart would be required.

7.2.1   microSD Card Slot

A microSD card slot is located on the right side of the unit's front panel. A microSD memory card can be inserted and removed from the device.
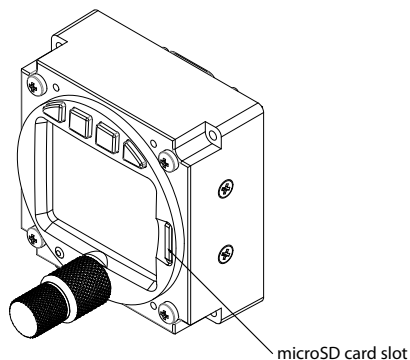
microSD card slot

Figure 7.1.: microSD Card Slot

To insert a microSD card, insert the card into the slot, print facing to the display, little nose facing upwards and gently push the card until it clicks in.

Inserting the microSD card in the wrong orientation may damage the slot.
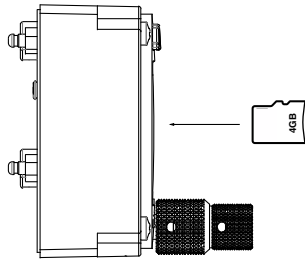
Figure 7.2.: microSD card in correct orientation

To remove an inserted microSD card, use your fingernail to gently push on the card until a click is audible. The card will be released following the click. Use your fingernail to remove the card.

Be careful. Application of too much force may damage the slot.

ACD-57 is compatible to all FAT or FAT32 formatted microSD cards. It has been successfully tested with microSD cards with a storage size of 2 to 64 gigabytes.

7.2.2   Using a Station Database

To use a database, please carry out the following steps:

1. Purchase a valid station database file in the *AIR Avionics License Store*. Please visit *http://www.air-avionics.com/license* for details.
2. Load the station database file onto a microSD card.
3. Insert the microSD card into the ACD-57.
4. Power the unit on.
5. Open the menu with a long push on the [inner knob pushbutton].
6. Use the [inner knob] to navigate to *CONFIGURATION MENU → DEVICE → INFO → DATABASES*.
7. Verify correct installation in the databases list.
8. Push the [ESC softkey] to leave the menu.

When the database license expires, the database can no longer be used and database functions are no longer available.

The station database and related functions are only available while the microSD card holding the station database file is inserted. If the microSD card is removed, the database and all related functions are unavailable.

7.2.3 Loading Software to ACD-57

For details on loading new software onto ACD-57, please consult the ACD-57 Installation Manual [1].

ACD-57 features a range of built-in self test features that continuously monitor system state and the state of connected systems to detect failures.

8.1 Failures

The detection of a failure is always annunciated to the flight crew on the display.

Depending on detected failure and failure severity, the system may seize to function or functionality may be limited. Failure messages either close automatically, can be closed by the flight crew, or can not be closed at all depending on failure severity.

<div align="center">

MASTER FAIL

INTERNAL FAILURE

CODE: 123456

</div>

Figure 8.1.: Major internal failure annunciation

8.2 Insufficient Data Failure Modes

8.2.1 No data from connected systems or internal systems

ACD-57 continuously monitors data from connected systems or its own internal hardware and software systems. If data is not regularly updated, it is no longer displayed. Instead the corresponding value is "crossed out" by a red cross (in case of entire systems that fail to respond) or yellow crosses (if single datasets in the menu expire).
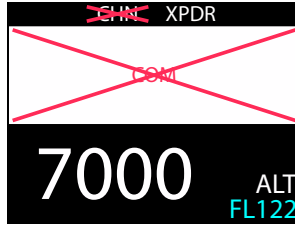
Figure 8.2.: No data/communication with connected COM system.

8.2.2 No GPS Data and/or No Database Installed

Some functions require a Database on an inserted microSD memory card and valid GPS position data. These are:

- Display of station names on the main page or the channel selection page.
- Nearest station list functions

If no GPS position data or database is available, station names are not displayed on the main page or the channel selection page. If trying to access the nearest station list by pushing the NRST softkey, an information message appears indicating that this function is not available. The message can be acknowledged by pushing the inner knob pushbutton.
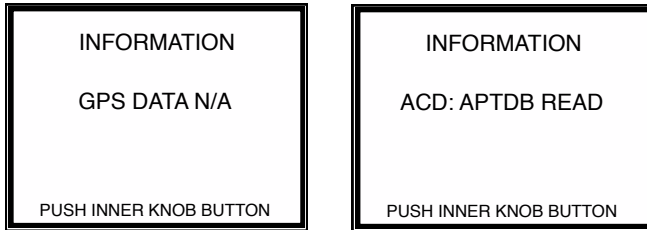
Figure 8.3.: Message indicating that database is not available (right) and GPS data is not available (left)

8.3 Systems Failures

8.3.1 Failure Condition Classification

Depending on failure severity and its consequences for the operational state of the system, ACD-57 distinguishes between two following failure classifications:

- Fatal Failure
- Reduced Function Failure

8.3.2   Fatal Failures

In case of a fatal failure, the failed system has seized operation. This can not be recovered during runtime, a restart is required.

A fatal failure message is displayed in *red* color and will remain visible for the rest of the runtime of the system.
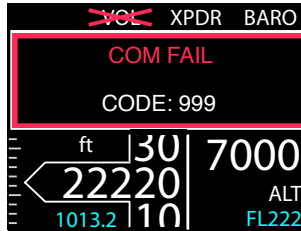
Figure 8.4.: Connected COM system has detected a fatal failure, failure code is displayed. Unaffected systems remain functional.

8.3.3   Reduced Function Failures

In case of a fatal failure, the failed system has an issue and functionality is limited/reduced. Some functions of the system may still be available.

A reduced function failure message is displayed in *amber* color and will disappear within 5 seconds. After that, the failed system will be enframed by an *amber* rectangle.
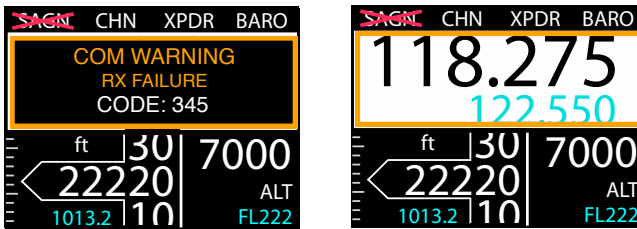
Figure 8.5.: Reduced function failure message (left) and system with reduced function after failure message has disappeared (right)

8.3.4   Failure Codes

Whenever available, failure codes are shown. All current failure codes and overall system state can be reviewed in *CONFIGURATION MENU → FAILURES*.

For failure code identification, please consult the manual of the affected system

A | Bibliography

[1] AIR Avionics, *ACD-57: Installation Manual*, March 2018.

This menu diagram only shows the basic configuration parameters accessible to the flight crew. For a complete menu diagram including all pin code protected parameters, please consult the ACD-57 Installation Manual [1].

Configuration Menu → DEVICE

- INFO
  - PID: Product identification
  - VID: Vendor identification/manufacturer
  - VER: Software version
  - SERIAL: Device serial number
  - DATABASES
    - DB VERSION: Database version
    - DB EXPIRY: Database expiration date
- STATUS
  - SUPPLY VOLT: Supply voltage in volt
  - GPS
    - SOURCE: Position source
    - DATA AVAIL: Data available (yes/no)
    - LAST POS AGE: Last position update age
  - BARO
    - SOURCE: Pressure data source
    - DATA AVAIL: Data available (yes/no)
- ILLUM OVERRIDE
  - Illumination override page: Manually overrides illumination configuration

Configuration Menu → ALTIMETER → UNITS

- ALTITUDE
  - M: meters (default)
  - FT: feet
- PRESSURE
  - HPA: hectopascals (equals millibars, default)
  - INHG: inches mercury

air avionics

```
Configuration        COM CONTROL        CHN SPACING        BOTH (default)
Menu                                                       25kHz
                                                           8.3kHz

                                        STATION NAMES:
                                        Values ON or OFF.
                                        Default: ON

                                        KNOB USE           CHANNEL: If not
                                                           in a menu, rotary
                                                           knobs are used for
                                                           channel selection

                                                           VOLUME: If not
                                                           in a menu, rotary
                                                           knobs are used for
                                                           volume selection
                                                           (default)

                     COM SYSTEM         COM system spe-
                                        cific menu items.
                                        Please consult
                                        COM system doc-
                                        umentation for
                                        an overview on
                                        available param-
                                        eters and recom-
                                        mended values

                                        INSTALLATION       COM system spe-
                                                           cific menu items.
                                                           Please consult
                                                           COM system doc-
                                                           umentation for
                                                           an overview on
                                                           available param-
                                                           eters and recom-
                                                           mended values
```

```
Configuration        XPDR CONTROL       VFR PRESET: VFR
Menu                                     squawk code pre-
                                         set configuration
                                         page: Values from
                                         0000 to 7777. De-
                                         fault is 7000

                                         FLIGHT ID: Flight
                                         ID configuration
                                         page: 8 Charac-
                                         ters

                     XPDR SYSTEM         INFO: Information    SW VERSION: Cur-
                                         about connected     rent XPDR system
                                         XPDR system         software version

                                                             FPGA VERSION:
                                                             Current XPDR sys-
                                                             tem FPGA version
```

```
Configuration        FAILURES: Page for
Menu                 reviewing error
                     codes and data
                     from all subsys-
                     tems including
                     connected sys-
                     tems
```

```
Configuration        PIN CODE: Page
Menu                 for entering pin
                     codes. Installation
                     Pin Code: 3000
```

C.1 COM Control Only Softkeys

```
SAGN: Activates
say again function.
Only available if
COM connected
unit supports this
function

                        CNCL: Cancels
                        back to the main
                        page

                        NRST: Opens the
                        nearest station
                        page
                                                ESC: Escapes back
                                                to main page

                                                EDIT: Edits the
                                                highlighted chan-
                                                nel in memory

CHN: Opens the                                  ADD: Adds a new
channel selection       MEM: Opens the          channel to mem-
page                    channel memory          ory
                        page
                                                DEL: Deletes the
                                                highlighted chan-
                                                nel from memory

MAIN PAGE               HIST: Opens the
                        channel history
                        page

NRST: Opens the
nearest station
page

HIST: Opens the
channel history
page

                        DONE: Saves set-
                        tings and exits to
                        main page

                        SQL: Opens the          DONE: Saves set-
                        squelch level con-      tings and exits to
                        trol page               main page

                                                DONE: Saves set-
                                                tings and exits to
                                                main page

Rotate Any Knob:                                IC1/IC2: Toggles
Opens the volume        ICM: Opens the          between intercom
control page            intercom control        1 and 2 (if avail-
                        page                     able)

                                                AUX: Opens the      DONE: Saves set-
                                                AUX volume con-     tings and exits to
                                                trol page (if avail- main page
                                                able)

                        TEST: Activates
                        the squelch test
                        function
```

Please note that depending on the setup of the *KNOB USE* parameter, the ⎡CHN softkey⎤ on the main page may be replaced by a ⎡VOL softkey⎤ (volume control) and rotation of ⎡inner knob⎤ or ⎡outer knob⎤ will open the channel selection page.

C.2   XPDR Control Only Softkeys

```
                              ┌─────────────────────┐
                              │ MDE: changes the    │
                              │ XPDR mode           │
                              ├─────────────────────┤
                              │ IDNT: Initiates the │
                              │ ident function      │
                              └─────────────────────┘
                                                          ┌─────────────────────┐
                                                          │ CNCL: Cancels       │
                                                          │ back to the main    │
                                                          │ page                │
                                                          ├─────────────────────┤
┌───────────┐                                             │ VFR / previous      │
│ MAIN PAGE │                                             │ squawk: Selects     │
└───────────┘                                             │ the VFR preset      │
                                                          │ squawk code or      │
                                                          │ the previous non-   │
                                                          │ VFR preset squawk   │
                              ┌─────────────────────┐     ├─────────────────────┤
                              │ Rotate Any Knob:    │     │ MDE: Changes        │
                              │ Opens the XPDR      │     │ the XPDR mode,      │
                              │ control page        │     │ sets the selected   │
                              └─────────────────────┘     │ squawk code, and    │
                                                          │ exits to main page  │
                                                          ├─────────────────────┤
                                                          │ IDNT: Initiates the │
                                                          │ ident function,     │
                                                          │ sets the selected   │
                                                          │ squawk code, and    │
                                                          │ exits to main page  │
                                                          └─────────────────────┘
```

C.3   Altimeter Only Softkeys

```
                              ┌─────────────────────┐
                              │ UNIT: Toggle alti-  │
                              │ tude display unit   │
                              │ between ft and m    │
                              ├─────────────────────┤
                              │ QNE / other pres-   │
                              │ sure setting: Sets  │
                              │ barometric refer-   │
                              │ ence to standard    │
                              │ pressure or the     │
                              │ shown pressure      │
┌───────────┐                 └─────────────────────┘
│ MAIN PAGE │                                             ┌─────────────────────┐
└───────────┘                                             │ CNCL: Cancels       │
                                                          │ back to the main    │
                                                          │ page                │
                                                          ├─────────────────────┤
                                                          │ UNIT: Toggle alti-  │
                              ┌─────────────────────┐     │ tude display unit   │
                              │ Rotate Any Knob:    │     │ between ft and m    │
                              │ Opens the BARO      │     ├─────────────────────┤
                              │ page                │     │ QNE / other pres-   │
                              └─────────────────────┘     │ sure setting: Sets  │
                                                          │ barometric refer-   │
                                                          │ ence to standard    │
                                                          │ pressure or the     │
                                                          │ shown pressure      │
                                                          └─────────────────────┘
```

C.4 COM and XPDR Control Softkeys

MAIN PAGE

- SAGN: Activates say again function. Only available if COM connected unit supports this function
- CHN: Opens the channel selection page
  - CNCL: Cancels back to the main page
  - NRST: Opens the nearest station page
  - MEM: Opens the channel memory page
    - ESC: Escapes back to main page
    - EDIT: Edits the highlighted channel in memory
    - ADD: Adds a new channel to memory
    - DEL: Deletes the highlighted channel from memory
  - HIST: Opens the channel history page
- XPDR: Opens the XPDR control page
  - CNCL: Cancels back to the main page
  - VFR / previous squawk: Selects the VFR preset squawk code or the previous non-VFR preset squawk
  - MDE: Changes the XPDR mode, sets the selected squawk code, and exits to main page
  - IDNT: Initiates the ident function, sets the selected squawk code, and exits to main page
- Rotate Any Knob: Opens the volume control page
  - DONE: Saves settings and exits to main page
  - SQL: Opens the squelch level control page
    - DONE: Saves settings and exits to main page
  - ICM: Opens the intercom control page
    - DONE: Saves settings and exits to main page
    - IC1/IC2: Toggles between intercom 1 and 2 (if available)
    - AUX: Opens the AUX volume control page (if available)
      - DONE: Saves settings and exits to main page
  - TEST: Activates the squelch test function

Please note that depending on the setup of the *KNOB USE* parameter, the ⟨CHN softkey⟩ on the main page may be replaced by a ⟨VOL softkey⟩ (volume control) and rotation of ⟨inner knob⟩ or ⟨outer knob⟩ will open the channel selection page.

C.5   COM and Altimeter Control Softkeys

Please note that depending on the setup of the *KNOB USE* parameter, the [CHN softkey] on the main page may be replaced by a [VOL softkey] (volume control) and rotation of [inner knob] or [outer knob] will open the channel selection page.

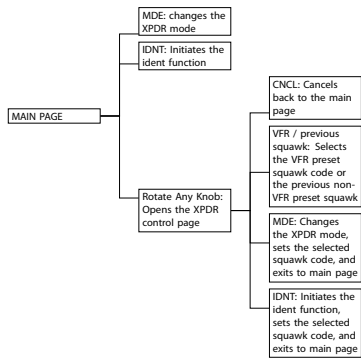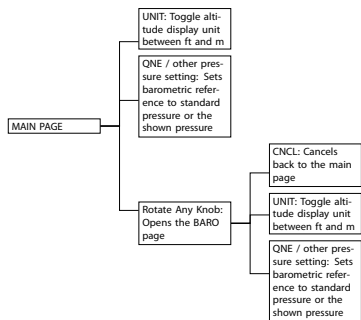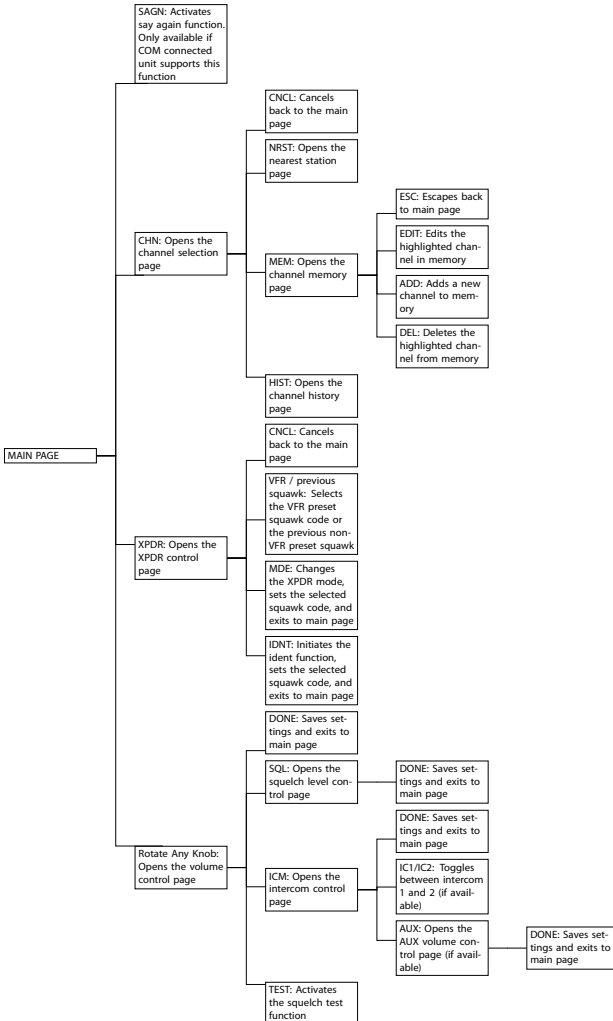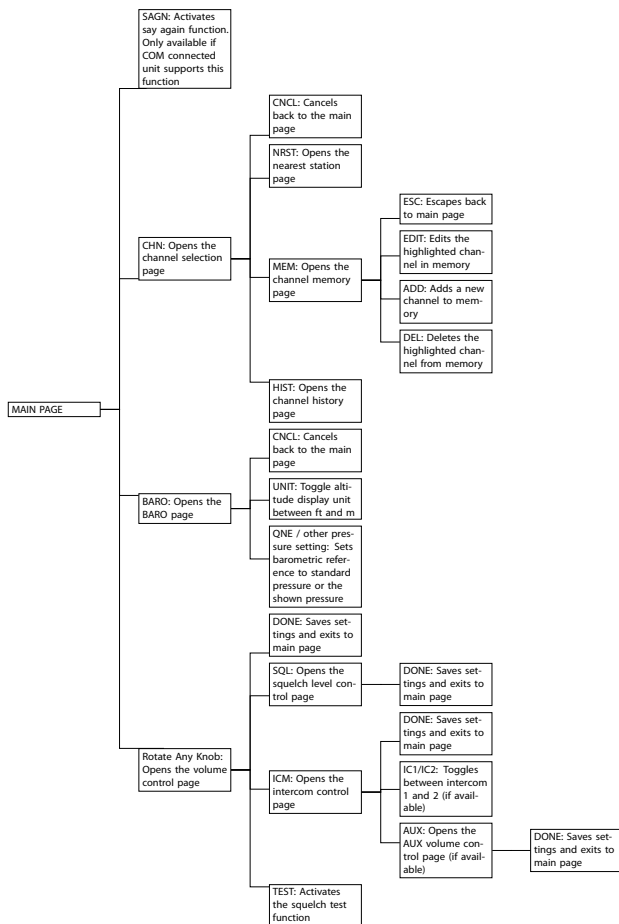# C.6   XPDR Control and Altimeter Softkeys

```
                    ┌──────────────────┐
                    │ MDE: changes the │
                    │ XPDR mode        │
                    ├──────────────────┤
                    │ IDNT: Initiates the │
                    │ ident function   │
                    │                  │        ┌──────────────────┐
                    │                  │        │ CNCL: Cancels    │
                    │                  │        │ back to the main │
                    │                  │        │ page             │
                    │                  │        ├──────────────────┤
                    │                  │        │ UNIT: Toggle alti-│
                    │ BARO: Opens the  │        │ tude display unit│
                    │ BARO page        │        │ between ft and m │
                    │                  │        ├──────────────────┤
                    │                  │        │ QNE / other pres-│
┌──────────┐        │                  │        │ sure setting: Sets│
│ MAIN PAGE│────────│                  │        │ barometric refer-│
└──────────┘        │                  │        │ ence to standard │
                    │                  │        │ pressure or the  │
                    │                  │        │ shown pressure   │
                    │                  │        ├──────────────────┤
                    │                  │        │ CNCL: Cancels    │
                    │                  │        │ back to the main │
                    │                  │        │ page             │
                    │                  │        ├──────────────────┤
                    │                  │        │ VFR / previous   │
                    │                  │        │ squawk: Selects  │
                    │                  │        │ the VFR preset   │
                    │                  │        │ squawk code or   │
                    │                  │        │ the previous non-│
                    │ Rotate Any Knob: │        │ VFR preset squawk│
                    │ Opens the XPDR   │        ├──────────────────┤
                    │ control page     │        │ MDE: Changes     │
                    │                  │        │ the XPDR mode,   │
                    │                  │        │ sets the selected│
                    │                  │        │ squawk code, and │
                    │                  │        │ exits to main page│
                    │                  │        ├──────────────────┤
                    │                  │        │ IDNT: Initiates the │
                    │                  │        │ ident function,  │
                    │                  │        │ sets the selected│
                    │                  │        │ squawk code, and │
                    │                  │        │ exits to main page│
                    └──────────────────┘        └──────────────────┘
```
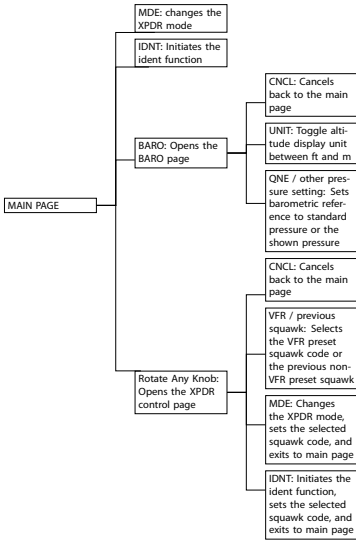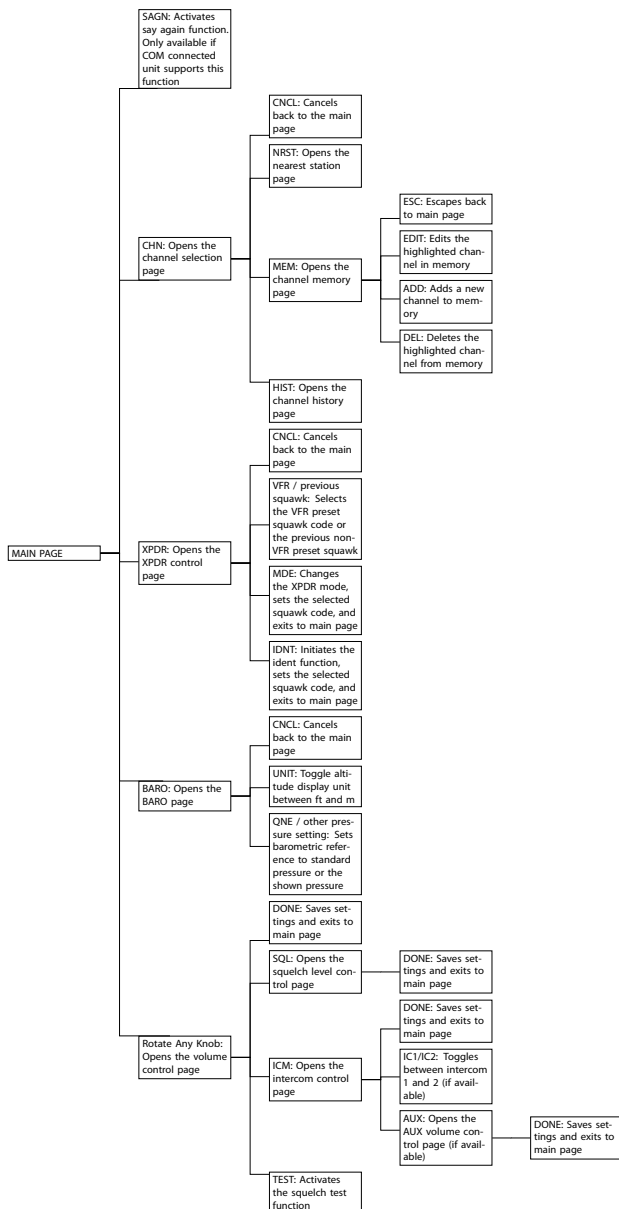
C.7 COM, XPDR Control, and Altimeter Softkeys

Please note that depending on the setup of the *KNOB USE* parameter, the [CHN softkey] on the main page may be replaced by a [VOL softkey] (volume control) and rotation of [inner knob] or [outer knob] will open the channel selection page.
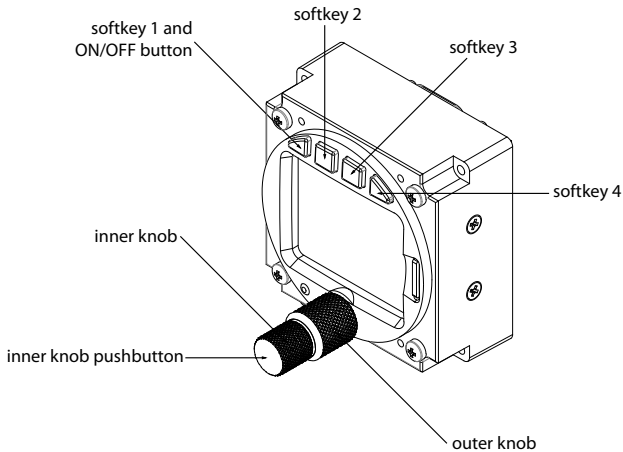
Figure D.1.: ACD-57 pilot controls

D.1 Switch On or Off

If not switching on automatically, push $\boxed{\text{softkey 1}}$, the leftmost button on top of the display, to switch the unit on. To switch the unit off, push $\boxed{\text{softkey 1}}$ longer than 4 seconds.

D.2 COM Operation

D.2.1 Volume Control

On the main page, the $\boxed{\text{inner knob}}$ opens the volume control page. On the volume control page, the $\boxed{\text{inner knob}}$ controls the ACTIVE channel volume, the $\boxed{\text{outer knob}}$ controls the STANDBY channel volume.

D.2.2 Channel Selection

On the main page, a short push on the $\boxed{\text{CHN softkey}}$ opens the channel selection page. On the channel selection page, the $\boxed{\text{inner knob}}$ controls the kHz, the $\boxed{\text{outer knob}}$ controls the MHz.

To select 8.33kHz channels, push and turn the $\boxed{\text{inner knob}}$.

D.3   XPDR Operation

D.3.1   Squawk Code Entry

The squawk code is entered in the XPDR page. The XPDR page is opened by pushing the ⌈XPDR softkey⌉ on the main page. On the XPDR page, use the ⌈outer knob⌉ to select a position in the squawk code and use the ⌈inner knob⌉ to adjust the selected position's value. Push the ⌈inner knob pushbutton⌉ to confirm the squawk code.

D.3.2   XPDR Mode Change

To change the XPDR mode from SBY (Standby) to ALT (Active) or back, please push the ⌈MDE softkey⌉ on the XPDR page. This also confirms the currently selected squawk code.

D.3.3   XPDR Ident Function

To use the XPDR ident function, please push the ⌈IDNT softkey⌉ on the XPDR page. This also confirms the currently selected squawk code.

D.4   Altimeter Operation

To adjust the barometric reference, please push the ⌈BARO softkey⌉ on the main page. On the baro input page, use the ⌈outer knob⌉ to adjust hPa and the ⌈inner knob⌉ to adjust daPa. Push the ⌈QNE softkey⌉ to use standard pressure.

To toggle between feet and meters, use the ⌈UNIT softkey⌉ .