

# A2A C172 Trainer

## variables list and notes for simpit builders

### Gauges:

(L:AirspeedIndicatedNeedle,number)	- airspeed needle
(L:AirspeedTAS,number)	- IAS/TAS conversion chart (range: 0 – 110)
(A:ATTITUDE INDICATOR PITCH DEGREES:1,degrees)	- artificial horizon, attitude
(A:ATTITUDE INDICATOR BANK DEGREES:1,grad)	- artificial horizon, bank
(A:INDICATED ALTITUDE:1,feet) 1000 % 10 / 100 +	- altimeter needle (hundreds feet) (range: 0 – 200)
(A:INDICATED ALTITUDE:1,feet) 10000 % 100 / 100 +	- altimeter needle (thousands feet) (range: 0 – 200)
(A:INDICATED ALTITUDE:1,feet) 100000 % 1000 / 100 +	- altimeter needle (ten thousands feet) (range: 0 – 200)
(A:KOHLSMAN SETTING HG:1,inHg) 27.99 - 24.87562 *	- Kohlsman knob in inHg (range: 0 – 100)
(A:KOHLSMAN SETTING HG:1,hectopascals) 950 -	- Kohlsman knob in hPa (range: 0 – 100)
(L:Nav1ObsNeedle,number)	- nav1 obs (range: 0 -180) – read only – inc/dec by default events (&K:VOR1_OBI_INC) and (&K:VOR1_OBI_DEC)
(L:Gsi1Needle,keyframe)	- glideslope indicator (range: 0 – 100)
(L:Gsi1Flag,enum)	- glideslope indicator flag (0 – off, 1 – on)
(L:Cdi1Needle,keyframe)	- course deviation indicator (range: 0 – 100)
(L:ToFrom1Needle,enum)	- to/from flag (0 – off, 1 – to, 2 – from)
(L:FuelLeftWingTank,gallons)	- left fuel tank
(L:FuelRightWingTank,gallons)	- right fuel tank
(L:Eng1_EGTGauge,number)	- exhaust gas temp in F
(L:EGTGauge_ref,percent)	- egt ref needle (range: 0 – 100)
(L:Eng1_GPH,gallons)	- fuel flow in gallons per hour
(L:Eng1_OilTemp,celsius)	- oil temp in C
(L:Eng1_OilPressure,psi)	- oil pressure in psi
(A:SUCTION PRESSURE,inHg)	- suction
(L:Ammeter1,amps)	- ammeter
(A:DELTA HEADING RATE,degrees per second) 1.1 * -10 max 10 min 10 + 5 *	- turn indicator (range: 0 – 100)
(A:TURN COORDINATOR BALL,position) -1 max 1 min 1 + 25 *	- ball (range: 0 – 50)
(L:HiAdjust,number)	- heading indicator knob
(L:AutopilotHeadingBug,number)	- heading bug – read only – inc/dec by default events

(L:HeadingGyro,degrees)	(&K:HEADING_BUG_INC) and (&K:HEADING_BUG_DEC)
(A:VERTICAL SPEED,feet per minute)	- heading gyro - vertical speed indicator
(L:Cdi2Needle,keyframe)	- course deviation indicator (range: 0 – 100)
(L:ToFrom2Needle,enum)	- to/from flag (0 – off, 1 – to, 2 – from)
(L:Cdi2Flag,bool)	- course deviation indicator flag (0 – off, 1 – on)
(L:Nav2ObsNeedle,number)	- nav2 obs (range: 0 -180) – read only – inc/dec by default events (&K:VOR2_OBI_INC) and (&K:VOR2_OBI_DEC)
(L:Eng1_RPM,RPM)	- engine rpm
(L:e1Hour4,number)	- engine hours, thousands
(L:e1Hour3,number)	- engine hours, hundreds
(L:e1Hour2,number)	- engine hours, tens
(L:e1Hour1,number)	- engine hours, ones
(L: e1HourFract1,number)	- engine hours, tenths
(L:AdfHdgNeedle,number)	- adf heading – read only – inc/dec by default events (&K:ADF_CARD_INC) and (&K: ADF_CARD _DEC)
(L:AdfCdiNeedle,keyframe)	- ADF course deviation needle
(A:WISKEY COMPASS INDICATION DEGREES,degrees)	- Whiskey compass

## Switches:

(L:Eng1_GeneratorSwitch,bool)	- generator switch
(L:Battery1Switch,bool)	- battery switch
(&K:TOGGLE_ELECT_FUEL_PUMP1)	- fuel pump
(&K:TOGGLE_BEACON_LIGHTS)	- default beacon light toggle event
(&K:LANDING_LIGHTS_TOGGLE)	- default landing light toggle event
(&K:TOGGLE_TAXI_LIGHTS)	- default taxi light toggle event
(&K:TOGGLE_NAV_LIGHTS)	- default nav light toggle event
(&K:STROBES_TOGGLE)	- default strobe light toggle event
(&K:PITOT_HEAT_TOGGLE)	- default pitot heat toggle event
1 (&K:AVIONICS_MASTER_SET) (on)	
0 (&K:AVIONICS_MASTER_SET) (off)	- default avionics master set event

## Center pedestal/lower main dash:

(L:Magnetos1Pct,percent)	- starter key (range: 0 – 15: off; 16 – 37: R magneto; 38 – 63: L magneto; 64 – 85: both magnetos; 86 – 100: starter)
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(L:FSEL172State,enum)	- fuel selector (0 – left, 1 – both, 2 – right)
(L:Eng1_FuelCutOffSwitch,bool)	- fuel cutoff lever (on/off)
(L:TrimtabPosition,percent)	- elevator trim position– read only – inc/dec by default events (&K:ELEV_TRIM_DN) and (&K:ELEV_TRIM_UP)
(L:GlareshieldLightKnob,number)	- illumination of the main dash (range: 0 – 32)
(L:PedestallLightKnob,number)	- illumination of the fuel selector (range: 0 – 32)
(L:RadioLightKnob,number)	- illumination of the radiostack (range: 0 – 32)
(L:PanelLightKnob,number)	- illumination of the gauges (range: 0 – 32)
(L:StaticAir,bool)	- static air lever (on/off)
(L:Throttle1Position,percent)	- throttle lever (range: 0 – 100)
(L:Eng1_MixtureManualLever,percent)	- mixture lever (range: 0 – 100)
(L:LandFlapsPos,enum)	- flaps position lever (0 – up, 1 – 2/4, 2 – 3/4, 3 – down)
(A:TRAILING EDGE FLAPS LEFT PERCENT,percent)	- flaps position indicator (range: 0 – 100)
(L:CabinTempControl,percent)	- cockpit heat (range: 0 – 100)
(L:CabinVent,percent)	- cockpit ventilation (range: 0 – 100)
(&K:PARKING_BRAKES)	- default parking brakes event

## Radiostack:

### KMA 26 Audioselector:

(L:kma26SelectorKnob_pos,enum)	- Audio selector knob (0 – inop/com1, 1 – com1, 2 – com2, 3 – inop/com2, 4 – inop/com2)
Com1 button	- if com2 transmit selected use default (&K:COM_RECEIVE_ALL_TOGGLE)
Com2 button	- if com1 transmit selected use default (&K:COM_RECEIVE_ALL_TOGGLE)
Com3 button	- inop (FSX supports just two com channels)
Nav1 button	- if (L:kma26Nav1Switch,bool) is zero, toggle default (&K:RADIO_VOR1_IDENT_DISABLE) event
Nav2 button	- if (L:kma26Nav2Switch,bool) is zero, toggle default (&K:RADIO_VOR2_IDENT_DISABLE) event
Mkr button	- if (L:kma26MkrSwitch,bool) is 1 and (A:MARKER SOUND,bool) is 0 toggle default (&K:MARKER_SOUND_TOGGLE) if (L:kma26MkrSwitch,bool) is 0 and (A:MARKER SOUND,bool) is 1 toggle default (&K:MARKER_SOUND_TOGGLE)
DME button	- if (L:kma26DmeSwitch,bool) is 1 toggle default (&K:RADIO_DME1_IDENT_ENABLE) if (L:kma26DmeSwitch,bool) is 0 toggle default (&K:RADIO_DME1_IDENT_DISABLE)
ADF button	- if (L:kma26AdfSwitch,bool) is 1 toggle default (&K:RADIO_ADF_IDENT_ENABLE) if (L:kma26AdfSwitch,bool) is 0 toggle default (&K:RADIO_ADF_IDENT_DISABLE)

Aux button	- inop
Moni button	- inop
Marker lights	- (L:kma26OMarker,bool) – outer marker; (L:kma26MMarker,bool) – middle marker; (L:kma26IMarker,bool) – inner marker
<b>KX 155A Com1/Nav1 unit:</b>	
Com1 on/off knob	- (L:Com1OnOff,bool)
Com1 STBY button	- (L:Com1StbySwitch,bool)
Com1 CHAN button	- (L:Com1ChanSwitch,bool)
Com1 outer knob	- (L:Com1FreqOuterKnob,percent) (range: 0 – 100)
Com1 inner knob	- (L:Com1FreqInnerKnob,percent) (range: 0 -100)
Com1 inner knob pull	- (L:Com1InnerKnobPull,bool)
Nav1 ident knob	- (L:Nav1Ident,bool)  If (L:Nav1Ident,bool) is equal to zero, toggle the (>K:RADIO_VOR1_IDENT_DISABLE) event
Nav1 STBY button	- (L:Nav1StbySwitch,bool)
Nav1 MODE button	- (L:Com1NavSwitch,bool)
Nav1 outer knob	- (L:Nav1FreqOuterKnob,percent) (range: 0 – 100)
Nav1 inner knob	- (L:Nav1FreqInnerKnob,percent) (range: 0 – 100)
Nav1 inner knob pull	- (L:Nav1InnerKnobPull,bool)
<b>KX 155A Com2/Nav2 unit:</b>	
Com2 on/off knob	- (L:Com2OnOff,bool)
Com2 STBY button	- (L:Com2StbySwitch,bool)
Com2 CHAN button	- (L:Com2ChanSwitch,bool)
Com2 outer knob	- (L:Com2FreqOuterKnob,percent) (range: 0 – 100)
Com2 inner knob	- (L:Com2FreqInnerKnob,percent) (range: 0 -100)
Com2 inner knob pull	- (L:Com2InnerKnobPull,bool)
Nav2 ident knob	- (L:Nav2Ident,bool)  If (L:Nav2Ident,bool) is equal to zero, toggle the (>K:RADIO_VOR2_IDENT_DISABLE) event
Nav2 STBY button	- (L:Nav2StbySwitch,bool)
Nav2 MODE button	- (L:Com2NavSwitch,bool)
Nav2 outer knob	- (L:Nav2FreqOuterKnob,percent) (range: 0 – 100)
Nav2 inner knob	- (L:Nav2FreqInnerKnob,percent) (range: 0 – 100)
Nav2 inner knob pull	- (L:Nav2InnerKnobPull,bool)
<b>ADF unit:</b>	
ADF on/off knob	- (L:AdfOnOffKnob,bool)
ADF button	- (L:AdfAdfButton,bool)
BFO button	- (L:AdfBfoButton,bool)
FRQ/Arrows button	- (L:AdfFrqButton,bool), also set (L:FrqButton,bool) to 1, don't change to 0 on button release

FRQ/ET button - (L:AdfFrqEtButton,bool) , also set (L:FrqEtButton,bool) to 1, don't change to 0 on button release

SET/RST button - (L:AdfFrqRstButton,bool) , also set (L:FrqRstButton,bool) to 1, don't change to 0 on button release

ADF outer knob - (L:AdfFreqOuterKnob,percent) (range: 0 – 100)

ADF inner knob - (L:AdfFreqInnerKnob,percent) (range: 0 – 100)

ADF inner knob pull - (L:AdfFreqInnerKnobPull,bool)

#### KT76C transponder unit:

0 button - (L:xpdr\_0\_button,bool) , also set (L:xpdr\_digit0,bool) to 1, don't change to 0 on button release

1 button - (L:xpdr\_1\_button,bool) , also set (L:xpdr\_digit1,bool) to 1, don't change to 0 on button release

2 button - (L:xpdr\_2\_button,bool) , also set (L:xpdr\_digit2,bool) to 1, don't change to 0 on button release

3 button - (L:xpdr\_3\_button,bool) , also set (L:xpdr\_digit3,bool) to 1, don't change to 0 on button release

4 button - (L:xpdr\_4\_button,bool) , also set (L:xpdr\_digit4,bool) to 1, don't change to 0 on button release

5 button - (L:xpdr\_5\_button,bool) , also set (L:xpdr\_digit5,bool) to 1, don't change to 0 on button release

6 button - (L:xpdr\_6\_button,bool) , also set (L:xpdr\_digit6,bool) to 1, don't change to 0 on button release

7 button - (L:xpdr\_7\_button,bool) , also set (L:xpdr\_digit7,bool) to 1, don't change to 0 on button release

IDT button - (L:xpdr\_ident\_button,bool)

CLR button - (L:xpdr\_clr\_button,bool) , also set (L:xpdr\_clr,bool) to 1, don't change to 0 on button release

VFR button - (L:xpdr\_vfr\_button,bool) , also set (L:xpdr\_vfr,bool) to 1, don't change to 0 on button release

On/off knob - (L:xpdr\_onoff\_knob\_pos,enum) (0 – off, 1 – Standby, 2 – Test, 3 – On, 4 – Alt)

#### KAP 140 Autopilot unit:

AP button - (L:kap140\_ap\_button,bool), also set (L:kap140\_ap,bool) to 1, don't change to 0 on button release

HDG button - (L:kap140\_hdg\_button,bool) , also set (L:kap140\_hdg,bool) to 1, don't change to 0 on button release

NAV button - (L:kap140\_nav\_button,bool) , also set (L:kap140\_nav,bool) to 1, don't change to 0 on button release

APR button - (L:kap140\_apr\_button,bool) , also set (L:kap140\_apr,bool) to 1, don't change to 0 on button release

REV button - (L:kap140\_rev\_button,bool) , also set (L:kap140\_rev,bool) to 1, don't change to 0 on button release

ALT button - (L:kap140\_alt\_button,bool) , also set (L:kap140\_alt,bool) to 1, don't change to 0 on button release

UP button - (L:kap140\_up\_button,bool) , also set (L:kap140\_up,bool) to 1, don't change to 0 on button release

DN button - (L:kap140\_dn\_button,bool) , also set (L:kap140\_dn,bool) to 1, don't change to 0 on button release

ARM button - (L:kap140\_arm\_button,bool) , also set (L:kap140\_arm,bool) to 1, don't change to 0 on button release

BARO button - (L:kap140\_baro\_button,bool) , also set (L:kap140\_baro,bool) to 1, don't change to 0 on button release

AP inner knob - (L:kap140\_InnerKnob,percent) (range: 0 – 100)

AP outer knob - (L:kap140\_OuterKnob,percent) (range: 0 – 100)

#### KN62 DME unit:

On/off switch - (L:kn62OnOff,bool)

Function switch - (L:kn62Function,enum) (0 – Remote, 1 – Frequency, 2 – Groundspeed/Time to station)

DME outer knob - (L:Kn62OuterKnob,percent) (range: 0 – 100)

DME inner knob - (L:Kn62InnerKnob,percent) (range: 0 – 100)

DME inner knobPull - (L:Kn62InnerKnobPull,bool)

## FSX GNS400 GPS:

gps\_on\_switch - toggle (L:GpsOnSwitch,bool), (&K:GPS\_POWER\_BUTTON) and (&K:GPS\_CLEAR\_ALL\_BUTTON)

NRST button	- (&K:GPS_NEAREST_BUTTON)
OBS button	- (&K:GPS_OBS_BUTTON)
MSG button	- (&K:GPS_MSG_BUTTON)
FPL button	- (&K:GPS_FLIGHTPLAN_BUTTON)
TERR button	- (&K:GPS_TERRAIN_BUTTON)
PROC button	- (&K:GPS_PROCEDURE_BUTTON)
RNG plus button	- (&K:GPS_ZOOMOUT_BUTTON)
RNG minus button	- (&K:GPS_ZOOMIN_BUTTON)
D button	- (&K:GPS_DIRECTTO_BUTTON)
MENU button	- (&K:GPS_MENU_BUTTON)
CLR button	- toggle (&K:GPS_CLEAR_BUTTON) event and increase (L:GpsClrSwitchCounter,enum) by one. If (L:GpsClrSwitchCounter,enum) is equal 90 toggle (&K:GPS_CLEAR_ALL_BUTTON) event and reset the counter.
ENT button	- (&K:GPS_ENTER_BUTTON)
GPS outer knob	- (L:GpsOuterKnob,percent) for knob rotation in VC, use (&K:GPS_GROUP_KNOB_DEC) and (&K:GPS_GROUP_KNOB_INC) events for GPS function.
GPS inner knob	- (L:GpsInnerKnob,percent) for knob rotation in VC, use (&K:GPS_PAGE_KNOB_DEC) and (&K:GPS_PAGE_KNOB_INC) events for GPS function.
GPS inner knob push	- toggle (L:GpsInnerKnobPush,bool) for VC animation, use (&K:GPS_CURSOR_BUTTON) event for GPS function.

## Misc:

### Headphones simulation:

To set the headphones on three things are needed in this sequence:

(L:Headphones,bool) set to 1; (L:SystemCondSelectFSX,number) set to 57; (L:SystemCondValueFSX,number) set to 1

To set the headphones off these three variables has to be set in this sequence:

(L:Headphones,bool) set to 0; (L:SystemCondSelectFSX,number) set to 57; (L:SystemCondValueFSX,number) set to 0

### Airframe hours counter:

(L:a1Hour4,number)	- airframe hours, thousands
(L:a1Hour3,number)	- airframe hours, hundreds
(L:a1Hour2,number)	- airframe hours, tens
(L:a1Hour1,number)	- airframe hours, ones
(L: a1HourFract1,number)	- airframe hours, tenths

### Doors:

(&K:TOGGLE_AIRCRAFT_EXIT) (&K:SELECT_1)	- left doors (toggle)
(&K:TOGGLE_AIRCRAFT_EXIT) (&K:SELECT_2)	- right doors (toggle)
(L:WindowLeft,bool)	- left window (toggle)
(L:WindowRight,bool)	- right window (toggle)

### Defrosters:

(L:WindowDefrosterControl1,number)	- left defroster levers (range: 0 – 50)
(L:WindowDefrosterControl2,number)	- right defroster levers (range: 0 – 50)

