

CHALK RIVER GRAPHICS

CrgSim Annunciator and Split Flap Panels

Chalk River Graphics

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Introduction

The annunciator panel started life as a development aid for CrgSim. It was used to display an assortment of flight simulator variables while testing. The suggestion was made by a visitor to include it in a distribution to determine if sim pilots were interested in yet another display. Most of the information displayed on the annunciator panel is available on one of the other avionics displays so it is usually not a necessary cockpit component. For those with an empty monitor this display can probably best be classified as eye candy.

Speaking of eye candy the Split Flap display falls into this category. Even though these displays have been disappearing from train stations and airport terminals chances are you have seen at least one of these eye catching displays somewhere. The CrgSim Split Flap panel displays the status of the local AI traffic. If you are at a small airport and/or have little or no AI traffic configured then this will not be an interesting display. On the other hand if you are at a busy airport and have at least some AI traffic configured then this will be a busy display.

LOCAL GND/AIR TRAFFIC

FLIGHT	FROM	TO	STATUS	RWY
PACIFICA 5019	KSEF	KSLE	ENROUTE	
N9124A	2V2	KCPS	ENROUTE	
AIRWAVE 1365	KDEN	KPHX	TAXIING	34R
PACIFICA 3836	KJFK	KDEN	ENROUTE	
WORLD TRAVEL	KDEN	KVCV	INITIAL	
SOAR	KDEN	KBDL	PUSHBACK	34R
N6979B	KDEN	MMCU	INITIAL	
N92324	KAMN	KFTG	ENROUTE	
N83131	KHLC	KOVE	ENROUTE	
PACIFICA	KDEN	KSJT	TAKING OFF	34R
PACIFICA	KDEN	KMIA	PUSHBACK	34R

09:08

Example Split Flap display awhile sitting on the runway at the t the Denver airport at 9:08 in the morning.

The active ground traffic has been assigned to takeoff on runway 34R.

The airborne traffic in the local airspace is enroute to various destinations. Pacifica 3836 is enroute to KDEN. The status for this aircraft will eventually change to LANDING and then to TAXIING. No runway has yet been assigned.

Configuration

Annunciator

The annunciator configuration file name is:

`CrgAnnun.cfg`

The annunciator panel is highly configurable. The button size, number of rows, number of columns, and button selection can all be configured. Unlike other instruments the size of the annunciator panel is determined by the number of rows, number of columns, and size of each button. To change the size of the annunciator panel change the size of the buttons. The size will change according to the change in button height or width times the number of rows or cols. For example a display with 8 rows will change in height by 8 pixels for every 1 pixel increase or decrease in button height.

Split Flap Display

The Split Display configuration file name is:

`CrgFlap.cfg`

The Split Flap display has the usual configuration parameters of size and location. The one additional parameter is the color of the letters on the split flaps. You can choose white or yellow. The line below shows the choice of yellow letters:

`flapcolor yellow`

Note that when changing the size of the display the text will become distorted. Once you have reached the desired size and pressed F3 followed by F2 the display will restart and the letter size will become corrected.

Annunciator Config Keywords

- rows - number of rows in the panel
- cols - number of columns in the panel
- buttonwidth - pixel width of each button
- buttonheight - pixel height of each button
- verticalcentering - a number used to touch up legend vertical centering. Some combinations of button height and font sizes will need a slight touch up with this number to center the annunciator light legend.
- fontsize - font size of the legend. Used to make the legend text proportional to the button size.
- Sound - On or off, Prevents or allows double beep sound on button status change.
- annun - this keyword is followed by a number indicating which type of annunciator is to be displayed. The annun keyword is used to select the order and type of annunciator buttons displayed. The listing below contains the reference numbers for each type of display variable.
- fuellowtot - total fuel in gallons at which the annunciator light turns yellow.
- fuelcrittot - total fuel in gallons at which the annunciator light turns reg
- fuellowright - right fuel tank gallons at which the annunciator light turns yellow

- fuelcritright - right fuel tank gallons at which the annunciator light turns red.
- fuellowleft - left fuel tank gallons at which the annunciator light turns yellow
- fuelcriteleft - left fuel tank gallons at which the annunciator light turns red
- on - this keyword is followed by the color to be used when the annunciator light is ON. Available colors are gray, red, blue, green, and yellow.
- Off - this keyword is followed by the color to be used when the annunciator light is OFF. Available colors are gray, red, blue, green, and yellow.

Split Flap Config Keywords

- Flapcolor - used to choose the color of the flap letters. Can be either white or yellow.

Annunciator Light Colors

Use of the on/off keywords allow the customization of the annunciator light color. Most of the annunciator lights that have an on/off status can be customized. A few are not customizable such as “Engine Fire” and the lights to indicate connection to CrgSim components.

A error message will not be generated if an attempt is made to change the colors on the few non-customizable annunciator lights.

The following lights have a fixed colour scheme:

- Engine Fire
- Connection to Com Manager
- Connection to Simulator
- Connection to Interface
- Model Name
- Latitude
- Longitude
- The various fuel lights
- V1, V2, and Vrotate
- The spoiler lights
- The blank light (always gray)

To change the colors of a light add the on/off keywords after the “annun” keyword:

```
annun 11  
on yellow  
off green
```

In the example above the “logo light” annunciator will turn yellow when switched on and will turn green when switched off.

Annunciator Lights Status

When the annunciator panel is not connected to the simulator the status of the annunciator lights is not valid except for the three lights identifying the connection status of the panel.

When the panel is not connected to the simulator all of the annunciator lights will be gray except for the three connection status lights.

When the panel connects to the simulator the annunciator lights will show the status of the variable (gray, green, yellow, or red) and some of the lights will display a value (gallons of fuel, voltage, ...).

In general a light will be gray if it is OFF. If the function being monitored is ON and in a safe state the light will be green. If the status should be brought to the attention of the crew it will be yellow and if there is a malfunction or a danger the light will be red.

For example:

- if the Auto Thrust switch is OFF the light will be gray. If the Auto Thrust switch is ON the light will be green.
- If the spoilers are armed the Spoilers Armed light will be yellow. If not armed the light will be gray.
- If Cabin lights are on the annunciator light will be green, otherwise the light will be gray.
- The Engine fire lights will be green (signifying they are operational) if all are OK. Otherwise they will be red.

Annunciator Lights Indices

- 1 - Connection to Com Manager. (green = good, yellow = none)
- 2 - Connection to Interface (green = good, yellow = none)
- 3 - Connection to Simulator (green = good, yellow = none)
- 4 - Model name (model name of sim aircraft)
- 5 - Landing gear (down, up, in transition)
- 6 - Flaps position (percentage)
- 7 - Landing lights (on/off)
- 8 - Strobe lights (on/off)
- 9 - Nav lights (on/off)
- 10 - Taxi lights (on/off)
- 11 - Logo lights (on/off)
- 12 - Cabin lights (on/off)
- 13 - Panel lights (on/off)
- 14 - Beacon lights (on/off)
- 15 - Seat belt light (on/off)
- 16 - No smoking light (on/off)
- 17 - Auto thrust (on/off)
- 18 - Avionics switch (on/off)
- 19 - Battery switch (on/off)
- 20 - Pitot heat (on/off)
- 21 - Auto pilot (on/off)
- 22 - Flight director (on/off)
- 23 - Latitude
- 24 - Longitude
- 25 - Nav 1 localizer
- 26 - Nav 2 localizer
- 27 - LNAV (on/off)
- 28 - LNAV armed (on/off)
- 29 - VNAV (on/off)
- 30 - VNAV armed (on/off)
- 31 - V1 (knots)
- 32 - V2 (knots)

- 33 - Vrotate
- 34 - Brake
- 35 - Park brake (on/off)
- 36 - Spoilers Armed (on/off)
- 37 - Spoiler left position
- 38 - Spoiler right position
- 39 - Total fuel remaining
- 40 - De-ice (on/off)
- 41 - Over Inner Marker
- 42 - Over Outer Marker
- 43 - Over Middle Marker.
- 44 - Engine # 1 fire
- 45 - Engine # 2 fire
- 46 - Engine # 3 fire
- 47 - Engine # 4 fire
- 48 - Gallons in right fuel tank
- 49 - Gallons in left fuel tank
- 50 - Total gallons of fuel
- 51 - APU voltage
- 52 - APU is running
- 53 - APU switch is on
- 54 - APU fire
- 55 - GPS/Nav switch position
- 56 - Blank annunciator light (Gray)
- 57 - Fuel Valve 1
- 58 - Fuel Valve 2
- 59 - Hydraulic Pump 1
- 60 - Hydraulic Pump 2
- 61 - Hydraulic Pump 3
- 62 - Hydraulic Pump 4
- 63 - Fuel Pump 1
- 64 - Fuel Pump 2
- 65 - Fuel Pump 3
- 66 - Fuel Pump 4

Example Annunciator Configuration File

The following configuration specifies a display with 3 rows and 3 columns. Each button is 180 pixels wide and 37 pixels high. The font size is 20, and the double beep sound on button status change is turned off. The buttons selected in order are:

VNAV status (29),
LNAV status (27),
Brake (34),
Taxi Lights (10),
Logo lights (11),
Latitude (23),
Longitude (24),
Com Connection (1),
Seat belt light (15).

The buttons selected as inserted into a configuration file would look like the following:

```
Rows 3
cols 3
buttonwidth 180
buttonheight 37
verticalcentering 15
fontsize 20
sound off
annun 29
annun 27
annun 34
annun 10
annun 11
annun 23
annun 24
```

annun 1
annun 15
winx 100
winy100

This unusual collection of indicator lights will produce the following display located at 100,100.

VNAV ON	TAXI LIGHTS	LON: 104.821W
LNAV ON	LOGO LIGHTS	COM CONNECT
BRAKES	LAT: 38.834N	SEAT BELTS

Split Flap Display Operation

The Split Flap display appearance on start up depends on your aircraft location, simulator AI traffic setting, and time of the simulation day. It will usually start up by showing the status of local airborne traffic. Then ground traffic will slowly come to life. Once the limited number of Split Flap display lines are filled all other AI traffic is ignored. Ground traffic has priority over airborne traffic.

The status of the Split Flap panel will not be displayed on the Communications Manager windows at this time. It is expected to be added by the next release.

On start up the flaps will advance at a fast pace. It will take the program about a minute to be able regulate the speed of the flap advance at the predetermined rate.

Contact

You can contact us at sim30@[crgsim.com](mailto:sim30@crgsim.com). We are especially interested in your comments, any problems you might have with the programs, and things that you like (or don't like) about them.

After spending a large amount of time removing non-flight sim posts (drugs, counterfeit boots, ... for sale) we reluctantly had to convert the web site to read only.