

## Flight Map Planning 3.0 for the HP 48GX and HP 49G+

**Description:** Photogrammetric flight map planning utility for the HP 48 and 49 calculators.

**Purpose:** To facilitate aerial mapping coordination between the photogrammetrist and the Land Surveyor. Software is designed for quick estimation of mapping projects.

**Installation:** Download the zip file to the Desktop or suitable folder. Un-pack the contents to any other folder. There should be 3 files in the package. 2 binary files – one for the HP48GX and one for the HP49g+ and the documentation .pdf file. To install, copy the library of choice to your unit using the Connectivity kit. Upon successful transfer, pick a port to store 0...2 type it in, then the |STO| button. For the HP48 turn the unit off and then back on and the library will be attached in the selected port. For the HP49G+ a warm-start is needed by press/holding the |ON| key and the |C| key and release.

**How to start:** Type the right shift and the 2 (Library) key. This will bring up all libraries attached to your unit. Key the button marked 'FM3.4 (8 or 9)'. Then key the menu button below 'FM3.0'. There will be 2 screens of input fields that look like this:

SCREEN #1	SCREEN #2
<pre>DEG XYZ HEX C&lt; 'X' \ILITIES AERIAL&gt; 05:40 JAN:15 ===== LENGTH-WIDTH-SCALE ===== LENGTH IN MILES = .66287 WIDTH IN MILES = .51136363 PHOTO SCALE = 3000.  3500 5280 / + [ ] [ ] [ ] [ ] [CANCEL] [OK]</pre>	<pre>DEG XYZ HEX C&lt; 'X' \ILITIES AERIAL&gt; 05:40 JAN:15 ===== OVERLAP-F.LENG.-PHOTO SIZE ===== ENDLAP IN % ?= 60. SIDELAP IN % ?= 30. FOCAL LENGTH IN INCHES ?= 6. PHOTO SIZE IN INCHES ?= 9.  [EDIT] [ ] [ ] [ ] [CANCEL] [OK]</pre>

Screen #1 requires the length of the project in terms of miles. Decimals miles will work just fine. In the HP49 this can be calculated in the command bar by entering the distance in feet (space) then 5280 (space) then / and enter. The Hp48 will require this calculation done before running the program. The width is calculated in a like manner. Photo scale is the ratio of camera focal length to average flying height expressed as a dimensionless ratio.

Screen #2 requires the end-lap, side-lap, focal length of the camera being used and the photo size. The typical values are already input as a convenience but may be altered. If all values are entered and accepted press 'OK' or 'ENTER' to begin the computation.

The following output screen will appear:

```
GROUND AREA 1 PHOTO = 2250.0 SQ.'
NEAT MODEL = 1575.0' BY 900.0'
TOTAL # OF MODELS = 8.0
TOTAL MODEL WIDTH = 3150.0'
SINGLE STRIP LENGTH = 3600.0'
NUMBER OF FLIGHT LINES = 2.0
TOTAL NO. PHOTOS = 10.0 MIN.
FLY HT. ABOVE MN. TERRAIN= 1500.0'
*****
```

This output screen is significantly different from past versions due to the thoughtful comments given to me over the years. To those people I thank you.

**A note of caution.** The output is based on various formulas from different sources. That said I have tried to check as many resources as I have available to me. Should anyone discover a discrepancy I would greatly appreciate a note explaining the error. I will do my best to correct it as quickly as possible.

The main reference for this program came from the book

"Elements of Photogrammetry" by Paul R. Wolf, second edition.

Note: The output is a graphic image. Refer to your manual on how to print. The HP49 version is much faster than the HP48. At the conclusion just press the |ON| button to begin clearing the variables. Press the |VAR| button to return to the previous directory.

[Click to email Author....](#)