**231101**

 **Off-line Operation**

 Once a SmartShot file is downloaded from the web site, www.projectilescience.com, SmartShot always runs off-line. The only time SmartShot is on-line is when a file, i.e., 6xc, 308 or 223, is opened from the web site to the browser. The equations, the spreadsheet format and all the input and output variables, are downloaded to the user's browser, whether a PC, Android or Apple smart phone, tablet or whatever. Once the desired file is open in the browser, all operations are conducted without reference to the web site. However, SmartShot does not automatically save the file that is open in the browser. When the browser tab is closed, the SmartShot file closes. Then, if a file needs to be reopened, the browser must have access to the web site. However, the SmartShot can operate off-line by simply saving the open file in the device. There are two very good reasons to save the file locally, i.e., on the device in use: 1) The file can be used later where there is no internet, and 2) The input variables are saved so they need not be reentered even if the internet is available.

**Saving SmartShot Files To A Local Device:**
 There are several different ways to save a file depending on the user's situation:

1) Whether the operating system is Windows, iOS or Android,

2) Whether the mission requires off-line operation.
3) Whether more than one version of a particular SmartShot file needs to be saved.
 Each device type, operating system, browser and user have different characteristics so I'll provide two file saving process which will serve most requirements and provide guidance those with different requirements. The two processes are for:

 1) Users with Android devices who want to save a single version of each SmartShot file, i.e., one version each of 6xc, 308 and 223, for use both on-line and off-line, and
2) Users with PC's running Microsoft Windows who want so save multiple SmartShot versions for use both on-line and off-line.

 Before getting into the processes it might be helpful to understand why SmartShot files require special processes. Browsers use files written in a special language, Hypertext Markup Language, called either htm or html, and operate with a different set of file management rules which complicates building folders for different versions of SmartShot files. I'll point out a few of these restrictions later. The advantage of using htm files is that *any* device that has a browser can run SmartShot files without the requirement for a spreadsheet application such as Excel or a clone. The SmartShot files look like Excel files in the browsers; but they are not xlsx files, they are htm files that look, feel and function like Excel files. This powerful capability is due to the genius of the people at Webworksheet.com. who provided the Excel to htm converter.

**1) A Simple Process For Off-Line Use Of An Android Phone With Firefox**

 This process is extremely simple: Download the SmartShot htm file (6xc, 308 or 223) from the ProjectileScience.com/Products web page to the browser in the local mobile device. Then add the page as a shortcut to the Home Screen of the mobile device. The shortcut will operate off-line in Firefox, Chrome (runs slowly in my tests), Edge, Safari and probably others. Every Browser I've tested will run SmartShot. A step-by-step process is provided below. Continuing then with Firefox:
1. With the internet connected, open [www.projectilescience.com](file:///C%3A%5CUsers%5Cpd%5CDocuments%5CMY%20DIRECTORIES%5C1Jarrett%5C1%20SS%20App%5C200811%20htm%20Saving%5Cwww.projectilescience.com), select the Products page. Select one of the SmartShot files; either 6xc, 308 or 223. It will open in the device browser. Confirm that the file is active by changing an input variable. Change the range to some different value, say 1000. The resulting EHP will be 1000 if no other changes are made.
2. Select the "Reset" button above the I column to restore the nominal input variables.
3. Select the" hamburger", i.e., the three vertical bars or dots somewhere on the screen. From the drop down menu, select "Add to home screen". Firefox will then let you put the shortcut on the home screen at the place of your choice.
4. Turn on the airplane mode, i.e., turn off the internet, both wi-fi and phone data.
5. Select the shortcut you just placed on your home screen. The SmartShot file will open in the browser.
6. Confirm the file is active by changing input variables. Selecting "Reset" will return the nominal values.
 The SmartShot file is now saved on the device and can be used without an internet connection. Enter the input variables for ballistics management, the rifle system, air density and wind vector of a recent or future shot. Then save this set of input variables, which I call a "version", by selecting the Save button over the J column. This prepares the phone for off-line operation with your data already entered. To confirm the save, turn off the phone and restart it, remaining in the airplane mode. Select the shortcut to the saved version of the SmartShot file. It will open in the browser with the saved variables. Repeat the saving process for the other calibers if desired.

**2) A Process For Saving Multiple Versions In A PC**

 Briefly, the process is to save a SmartShot file (6xc, 308 or 223) to the File Manager. Then reopen the just-saved file in the browser, make the desired changes and then save it back to the folder using the Save button above column J. This process can be reused as many times as needed, limited only by the PC's memory. The saved SmartShot file will open without an internet connection.
 The details of this process are as follows:

1. Open a new folder in the File Manager for this specific SmartShot file. Label the folder distinctively, say "6xc". Other files might be "300 Win Mag" and "33xc". All long range rifles use the same nominal 6xc file.
2. Open www.projectilescience.com/Products page and select the current version of the 6xc file. It will open in the browser of the PC.

3. The remaining steps do not require an internet connection.
4. Use Ctrl-S to save the nominal 6xc htm file to the 6xc folder in the File Manager. Rename the file to suit, perhaps 6xc V 3150, etc. Close the file in the browser.

5. From the File Manager, open the saved file, 6xc V3150. It will open in the browser.
6. Make the desired change(s). When first set up for use, at least half of the 39 input variables will be changed but for this demonstration, just change the velocity to 3150 in cell A7.
7. Press the Save button. This will save the file with the changes to the File Manager. Close the file in the browser.
8. Open the file from the File Manager. It will open in the browser *with* the saved changes.

9. The htm file can be sent as an attachment via gmail from the PC to any device with a browser. The htm file can be opened in the browser of the receiving device. Once received and saved the file will function off-line. The htm files can also be saved to a flash drive and moved to other devices.
 Only one version of the 6xc file per folder is allowed so each different saved 6xc file requires a different folder. Repeat the process for each folder starting with Ctrl-S to save the nominal file from the web site to each different folder. Then each nominal file can be opened from each folder, changed and saved back to it's unique folder with the Save button.

**Special File Management Buttons**
 SmartShot has three htm file management buttons on the spreadsheet above columns I, J, and K; "Reset", "Save" and "Print".

**Reset** - Returns all spreadsheet input and output values to the reference values when the file was opened. If this file was opened from the web site, it will have the nominal values for that caliber. If it was opened from the File Manager, it will have the saved values.

**Save** - Saves the current variable settings to the File Manager. The web version is not changed, but the command to open the web version will default to the saved local version. The web version inaccessible while a Save version exists on a local drive. The web version cannot be permanently changed by a user.

**Print** - Prints the spreadsheet image to the default printer; it is not active.