



**User's Guide for
JSE Electrical Contractors'
Fuel and Oil Change
Recording Application
for Android Phones**

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Introduction

The *JSE Fuel & Oil* Application was designed specifically for, and with the help of the staff at, JSE Electrical Contractors, Inc. Although the application has been designed to be self-explanatory, the following pages will provide the basics for installing the app, and then using it on a regular basis.

Installation

The application file (JSEFuel.APK) is stored on the file server at the offices of JSE and can be found on the network on the “JSE-FILESERVER” in the “JSEFuel” folder. Please follow the steps below to transfer this installation file and get it running on the employee’s JSE-supplied cell phone:

1. Connect the phone to the computer with a standard USB cable.
2. On the computer, open ‘Window’s File Explorer’ (FE) and make sure the phone can be found in the left pane of FE. Clicking on the phone’s name should show “Card” and “Phone” in the right pane (see example screen below).

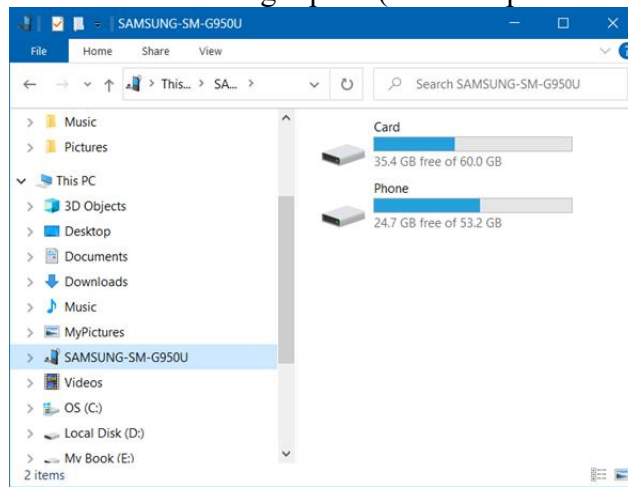


Figure 1: File Explorer showing Phone folder

3. Click on the ‘>’ to the left of the phone’s name to expand its contents, then click on the ‘>’ to the left of ‘Phone’ to expand its contents as well. Within the list that opens, make sure that you can find the folder with the name “Download” or “Downloads” (see example screen below). You can ignore any differences between the sample and what you may see on your screen.

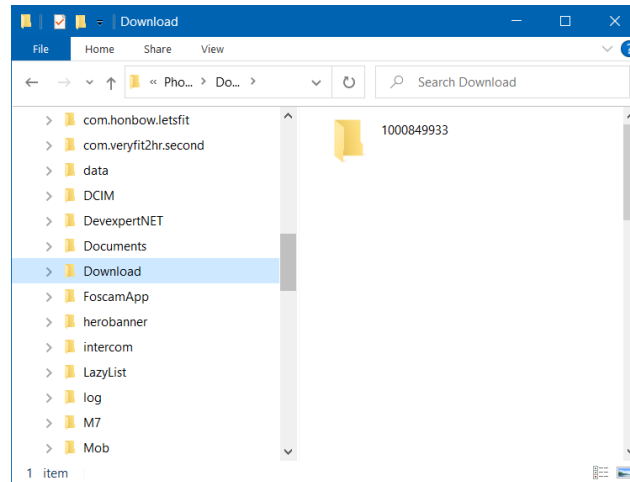


Figure 2: File Explorer showing "Download" folder

4. Scroll the left FE pane down until you can see “Network”. If the arrow to the left of “Network” is pointing down, continue to the next step. If the arrow is pointing right, click on it to expand the list of connected computers, then continue.

5. Locate the computer named “JSE-FILESERVER” and click on the ‘>’ to expand its directory list. Expand the ‘C’ folder and find and click on the folder named “JSEFuel” then, in the right pane, find and click on the file named “JSEFuel.apk”

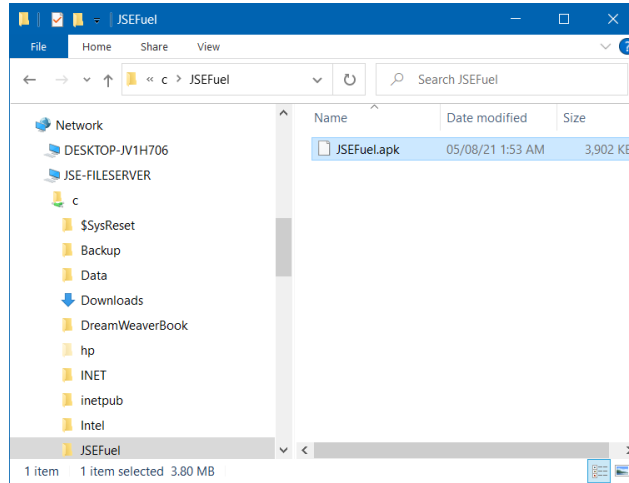


Figure 3: File Explorer showing location of "JSEFuel.apk"

6. Scroll the left pane back up until you can see the “(phone name)\Phone\Download” folder, but DO NOT click on it, just make sure you can see it.
7. In the right pane, click and hold your mouse button on the “JSEFuel.apk” file and “drag” it to the “Download” folder in the left pane. When the “Download” folder

is highlighted and you see “+ Copy”, release your mouse button to copy the file to the phone.

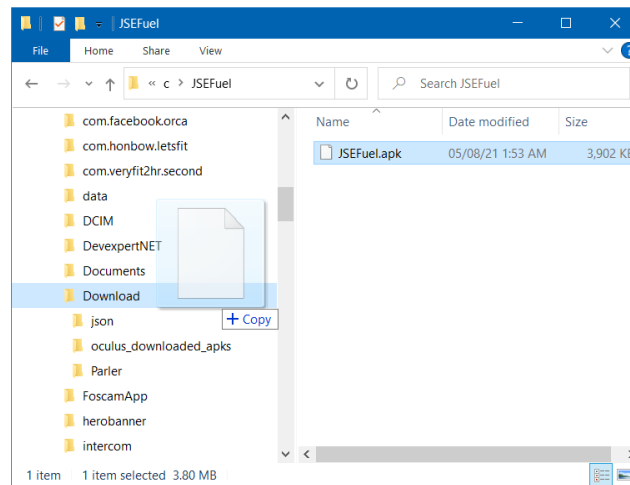


Figure 4: File Explorer copying "JSEFuel.pdf" to phone

8. You can now close FE and disconnect the phone from the computer.
9. On the PHONE, find and open its File or File Manager App, then locate and go to the “Downloads” folder. You should see the “JSEFuel.apk” file. Click on it to install the application.

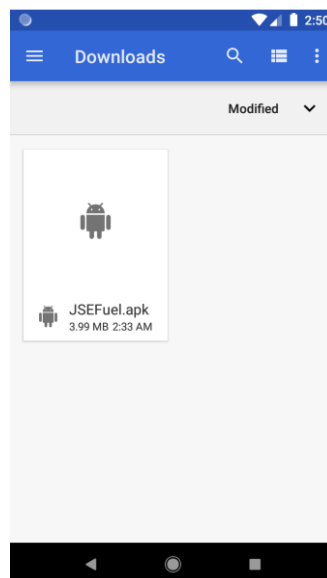


Figure 5: Phone screen showing "JSEFuel.apk" installation file

10. You should see a screen that says, “Do you want to install this application? It does not require any special Access.” Click on “INSTALL”. If it asks for any additional permissions, click “ALLOW”.
11. When completed, you should be presented with the following screen:

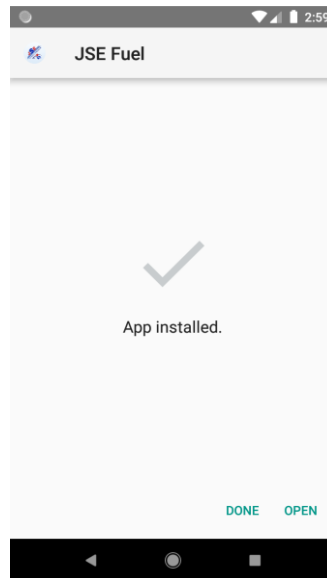


Figure 6: Phone screen showing App Installed

12. Make sure that WiFi is turned on and the phone has a reliable connection, then click “OPEN”.
13. Although this application does not control calls, use the phone’s location information, or use SMS messaging, it requires these permissions to access

certain capabilities required within the app, so please click “ALLOW” (or “Allow When Running”) for all requests that pop up.

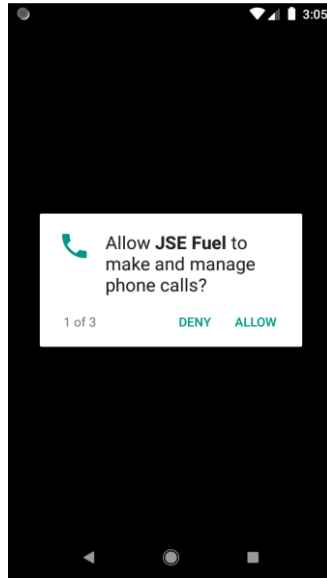


Figure 7: Phone screen showing request for permission

14. This concludes the installation process. Depending on the device, and the Android version installed on it, the phone may start the app, it may return to the “File Manager”, or it may return to the phone’s main screen. In any case, please proceed to the next section “Running the Application” to continue.

Running the Application

Running the App for the First Time

The first time the application is run, it will determine that the database has not yet been copied to the phone and provide the ability (by simply touching the lower part of the screen) to fetch the database from the server and install a copy on the phone. The application cannot continue until this process is completed, so please make sure that the WiFi is turned on and can connect to the server. Then, simply touch the lower part of the screen to begin the transfer. The app will gather data from the office server, then create and fill five tables on the phone. A status screen will appear showing the progress of the operation.

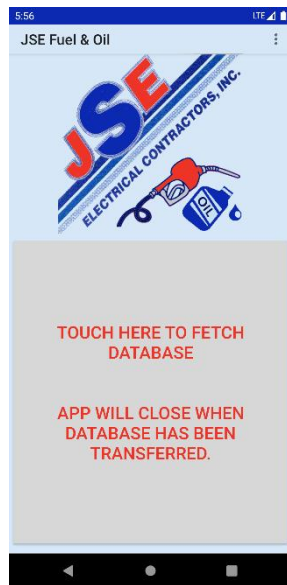


Figure 8: Phone screen showing First Run request to transfer database

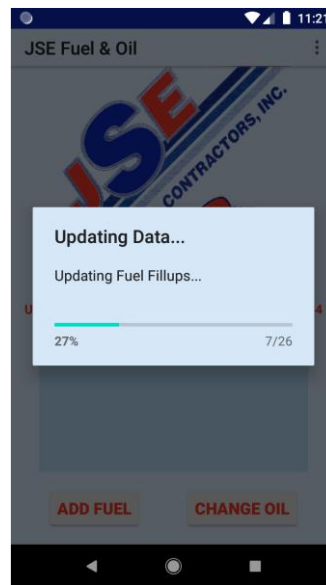


Figure 9: Phone screen showing update progress

Once the copy is complete, the app will close.

Normal Application Operation

JSE Fuel & Oil is designed to run only on JSE supplied smart phones¹. It determines authorization by getting the phone number of the device it is being run on from the hardware itself. If the phone number is found in the JSE database, it retrieves the information associated with that number and assumes that the employee assigned to that number is running the application, and it will set the vehicle that this person is assigned to as the default selected vehicle. If the employee has not been assigned to a vehicle, none will be pre-selected, and they must choose a vehicle from the supplied list.

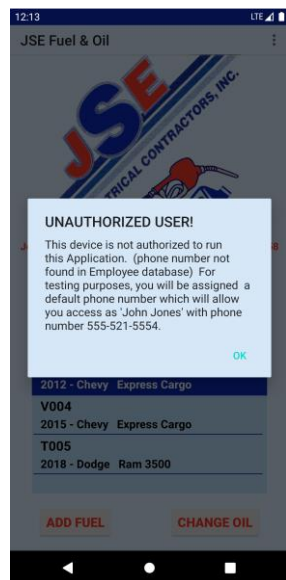


Figure 11: Phone screen showing Unauthorized User notice



Figure 10: Phone screen showing main application screen with vehicle V003 selected

With the main screen displayed, the user can select the vehicle that they wish to work with by scrolling the available list and touching on the appropriate choice. The selected vehicle

¹ For testing purposes, the application will temporarily be allowed to run on other phones. If the app does not find the current device's phone number in the database, it will use the employee information from John Jones, with phone number 555-521-5554, assigned to vehicle V003.

will display in dark blue with white text. The user can then press one of the buttons near the bottom of the screen to “Add Fuel” or “Change Oil”.

The user can also drop down a menu from the top right to display additional options. The sixth option “Exit App” will simply close the app. The fifth option “Update Database” allows the user to force a check of the main database in the office and copy any changes to the local database on the phone. This should not be required under normal circumstances because the phone will recognize when it connects to the office’s internal network and check for updates whenever the phone is in proximity of the office. The first two options, “Add Fuel” and “Add Oil

Change”, work the same as the buttons near the bottom of the screen, which will bring up a different screen to perform the chosen action (described below in *Add Fuel* and *Add an Oil Change*). The third and fourth options “View Fuel History” and “View Oil Change History” will present new screens that provide the user with information about all the fuel fill-ups or oil changes recorded for the currently selected vehicle. The lists are scrollable and show, in chronological order, historical information about each purchase.

For fuel, it shows the date and time of the fill-up, the miles travelled since the last fill- up, the gallons required to fill the tank, and the Miles Per Gallon (MPG) obtained with that tank. The last (highlighted) entry in the list is a summary of all the miles this vehicle has travelled, the total gallons of fuel required to drive that distance, and the average MPG throughout the vehicle’s history. Unusual variances in these readings can indicate possible engine issues that should be investigated, fuel being syphoned or leaking from the tank, or simple data entry errors.

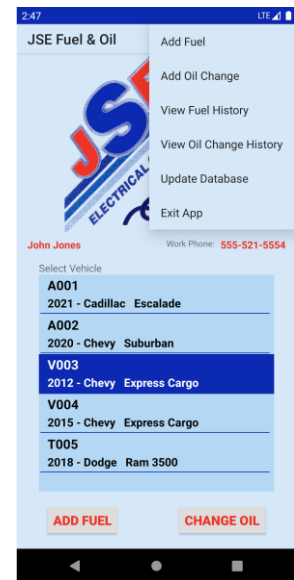


Figure 12: Phone screen showing main screen drop-down menu

Any data entry errors noticed should be reported to the office where they can be fixed in the main database. This application does not currently have the ability to make changes.

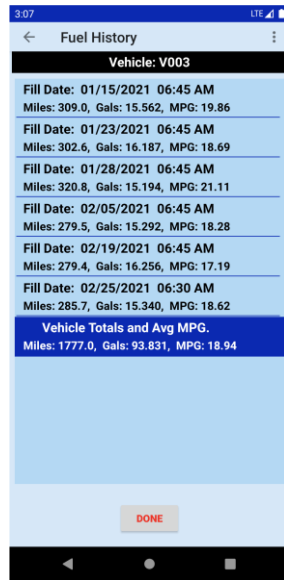


Figure 13: Phone screen showing Fuel History screen



Figure 14: Phone screen showing Oil History screen

For oil changes, the list shows the date of the oil change, the odometer reading when the oil was changed, and the cost to get the oil changed. The last (highlighted) entry displays the average cost of all oil changes and the average miles between changes.

Add Fuel

When the “Add Fuel” button or menu selection is pressed on the main screen, the “Add Fuel Fill” screen is activated for the selected vehicle. The “Fill Date” is preset to the current date, and the “Fill Time” is defaulted to the current time, rounded to the nearest 15 minutes. These can be changed by simply touching on the appropriate entry. For the date, a calendar will pop up allowing the user to select the current or any past date (future dates are not allowed because, despite the adventures of Marty McFly, Captain Kirk, Sam Beckett, et al., time travel is not yet possible). Touching on the “Fill Time” entry will pop up a “Time Picker” which will allow the user to spin to the chosen hour and closest 15-minute interval, and also indicate AM or PM. It was indicated that some JSE

2:09 LTE

← Add Fuel Fill

Vehicle: V003

Fill Date: 02/25/2021 Fill Time: 06:30 AM

Odometer Miles: 3767.0 Miles Since Last Fill: 285.7

Gallons: 15.340 Cost: \$48.00

Purchased From:

- 500 Arcadian Ave., Waukesha
- Kwik Trip 1700 Pewaukee Rd., Waukesha
- Kwik Trip 2302 Moreland Blvd., Waukesha
- Mobile 101 E. Broadway St., Waukesha
- Quick Fuel 1511 Pearl St., Waukesha
- Shell 1635 E Main St., Waukesha
- Speedway

CANCEL SAVE

Figure 16: Phone screen showing Add Fuel Fill screen

2:30 LTE

← Add Fuel Fill

Vehicle: V003

Fill Date: 02/25/2021 Fill Time: 06:30 AM

Select Fillup Date:

Thu, Feb 25

February 2021

CANCEL OK

Figure 15: Phone screen showing pop-up calendar

3:03

← Add Fuel Fill

Vehicle: V003

Select Fillup Time:

6 : 30 AM

7 45 PM

CANCEL OK

Figure 17: Phone screen showing pop-up time picker

employees reset a “Trip Meter” each time they fill their vehicle to record the milage for each tank of fuel. This can provide a slightly more accurate distance reading because many vehicles

record the trips in 1/10-mile increments, while the main odometer rounds to the nearest mile. Therefore, this app allows the user to enter either the odometer reading OR the trip meter reading and the app calculates the other entry based on the mileage recorded for the previous fillup. The app will also allow the user to enter BOTH, in case the database has become out of sync with the actual odometer reading. Most fuel pumps will indicate the amount of fuel dispensed to three decimal places, so that is what the “Gallons” entry is expecting. The “Cost” field is expecting the entry to be rounded to the nearest penny. The app will also require the user to select where the fuel was purchased and will limit the provided list to stations that actually sell the type of fuel the currently selected vehicle uses. (if the vehicle runs on diesel, the user will only be shown stations that are known to sell diesel fuel) The first entry in the list will always show “*** Not Listed Below ***” as an option in case the station the user is at has not been entered into the database. Once all entries have been made, the user can click on the “SAVE” button to add the entry to the database. Some verifications will be done and, if acceptable, the entry will be saved to the database. If not acceptable, the user will be provided with a warning and requested to fix the inconsistent data. Once all entries have been deemed acceptable, if the phone is currently connected to the internet, the update will be sent to the office database, as well as stored on the phone. If the internet is unavailable, the entry will be stored on the phone, and sent to the office when the internet becomes available again. Once the information is saved the user will be returned to the main screen. Of course, throughout the process, the user can hit the “CANCEL” button to abort the operation and immediately return to the main screen.

Add an Oil Change

When the “CHANGE OIL” button or the “Add Oil Change” menu selection is pressed on the main screen, the “Add Oil Change” screen is activated for the selected vehicle. The “Oil Change Date” is preset to the current date. This can be changed by simply touching on the Oil Change Date and a calendar will pop up as described previously for the “Add Fuel Fill” screen. Be sure to fill in the cost and odometer reading and select a provider from the list. Again, if the provider is not listed, simply select the “*** Not Listed Below ***” choice at the top of the list. Once all entries have been made, the user can click on the “SAVE” button to add the entry to the database. Some verifications will be done and, if acceptable, the entry will be saved to the database. If not acceptable, the user will be provided with a warning and requested to fix the inconsistent data. Once all entries have been deemed acceptable, if the phone is currently connected to the internet, the update will be sent to the office database, as well as stored on the phone. If the internet is not available, the entry will be stored on the phone and sent to the office when the internet becomes available again. Once the information is saved the user will be returned to the main screen. Of course, throughout the process, the user can hit the “CANCEL” button to abort the operation and immediately return to the main screen.

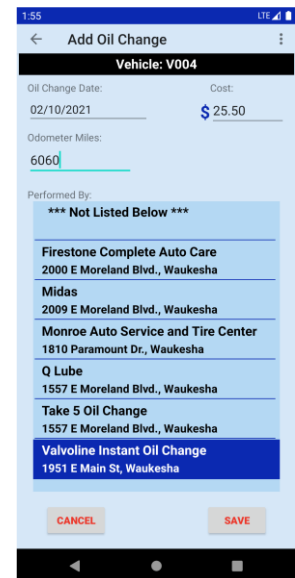


Figure 18: Phone screen showing Add Oil Change screen