

U.S. DEPARTMENT OF HOMELAND SECURITY  
FEDERAL LAW ENFORCEMENT TRAINING CENTER  
OFFICE OF TRAINING OPERATIONS  
TECHNICAL OPERATIONS DIVISION



# Homeland Security

## LESSON PLAN

KNOW YOUR CELL PHONE

3257

SEP/10

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**DEVELOPED BY: (MAY/08)**

(b)(6)

**Senior Instructor, CFI (Team Leader)**  
Senior Instructor, CFI  
Instructor, CFI

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**REVIEWED BY: (JUL/09)**

(b)(6)

**Senior Instructor, Technical Operations Division (Team Leader)**  
Program Specialist, Technical Operations Division

LP updated as follows:

Division Title changed from CFI to TOD, and FOUO/LES markings added.

There were no changes to the TPO or EPOs

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**REVIEWED BY: (SEP/10)**

(b)(6)

Branch Chief, Technical Operations Division  
Template Revised Only

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## SYLLABUS

**COURSE TITLE:           KNOW YOUR CELL PHONE**

**COURSE NUMBER:       3257**

**COURSE DATE:           SEP/10**

**LENGTH OF PRESENTATION:**

| LECTURE | LAB | P.E. | TOTAL | PROGRAM | OPTION |
|---------|-----|------|-------|---------|--------|
|         | 1   |      | 1     | MDIP    |        |

### **DESCRIPTION:**

Cell phones are far more than communications devices. To a great extent they have replaced Personal Digital Assistants (PDA's) as the preferred personal digital storage device. Cell phones can be (or contain): a camera, storage device for photographs and other images, container for personal music, an email terminal, an Internet browser, a personal calendar, an address book... The list goes on. The purpose of this course, consisting entirely of a single laboratory exercise, is to acquaint the learner with the technical features of his or her own cell phone, and to use the results of the exercise as a foundation for the discussion of the varied technologies available in the world of cell phones.

### **TERMINAL PERFORMANCE OBJECTIVE (TPO):**

Using a personal cell phone, the student will identify the technical features and specification of the cell phone and compare the responses with the actual features and specifications published by the manufacturer and/or Cell Service Provider.

### **ENABLING PERFORMANCE OBJECTIVES (EPO):**

EPO 1: Identify the technical features and specifications of your personal cell phone.

EPO 2: Locate on the Internet the web page which details the specifications and features of your cell phone.

### **STUDENT SPECIAL REQUIREMENTS:**

Must have a personal cell phone. If a student does not have a cell phone, the instructor can provide one from the training device inventory.

### **METHOD OF EVALUATION**

Completion of course

## **INSTRUCTOR GUIDE**

### **METHODOLOGIES:**

1. Laboratory exercise
2. Discussion

### **TRAINING AIDS/EQUIPMENT:**

1. Instructor:  
Computer with PowerPoint and Projector
2. Student:  
Personal cell phone

### **INSTRUCTOR SPECIAL REQUIREMENTS:**

Comprehensive understanding of cellular technology.

## OUTLINE OF INSTRUCTION

### I. INTRODUCTION

#### A. RAPPORT AND OPENING STATEMENT

1. As an introductory exercise for cell phone technology, the student will examine his or her own cell phone. Because cell phone technology is inherently sophisticated the student will probably encounter some technical features that they don't understand or have never heard of before.
2. This exercise is used as a springboard for discussion of some of the arcane technical features built into every cell phone.
3. Each feature identified in this exercise will be revisited more comprehensively in subsequent courses.

#### B. LESSON PLAN OVERVIEW

1. Terminal performance objective (TPO)  
Using a personal cell phone, the student will identify the technical features and specification of the cell phone and compare the responses with the actual features and specifications published by the manufacturer and/or Cell Service Provider.
2. ENABLING PERFORMANCE OBJECTIVES (EPO)  
EPO#1: Identify the technical features and specifications of your personal cell phone.  
EPO#2: Locate on the Internet the web page which details the specifications and features of your cell phone.

### II. PRESENTATION

#### A. EPO#1: IDENTIFY THE TECHNICAL FEATURES AND SPECIFICATIONS OF YOUR PERSONAL CELL PHONE.

1. Distribute the instrument included as Attachment 1, and have students complete the exercise. This should take no more than 20 minutes.  

Be prepared to assist some students who may not know how to obtain some of the information requested on the instrument.
2. Review the exercise sequentially and be prepared to discuss any technical questions that may arise.
3. Note: because all cell phones are different, the instructor can expect a wide array of technical questions. Some anticipated

discussion points:

- a. Cell technology. There are several cell technologies available in the U.S. They are:
  - i. CDMA: Code Division Multiple Access. This is the primary multiplex technology of Alltel and Verizon (and several other smaller providers).
  - ii. TDMA: Time Division Multiple Access. This was the first generation of digital cell phones. Although still found in millions of older phones (and supported by AT&T, Cingular, T-Mobile, and others), it is being replaced by those companies with the newer GSM technology.
  - iii. GSM: Global Systems Mobile. The world-wide standard for cell phone multiplexing technology. In the U.S. it has been adopted by T-Mobile and AT&T (and several smaller service providers).
  - iv. iDENT. This Motorola-developed technology was the basis for Nextel networks and features the push-to-talk (P2T) technology, so popular with emergency organizations. Now iDENT is available on Sprint networks.
  - v. PCS. Personal Communications Services. The primary technology for Sprint networks. It uses an entirely different frequency spectrum and geographical areas than other cell technologies.
  - vi. Most phones manufactured nowadays have multi-channel (technology) capability. That is because when roaming, or in crowded spectrums, when the primary technology is unavailable, the secondary technology will automatically go into service. As an example, Motorola RazR phones on an Alltel network have CDMA primary with PCS secondary.
- b. MIN/MDN: This is the 10-digit phone number assigned by the Cell Service provider to the phone. There are actually two 10-digit numbers for each cell account: MIN (Mobile Identification Number) is the actual number; MDN (Mobile Directory Number) is the number that is called to reach the cell phone, frequently an alias. Note: This bi-numbering system allows transportability of numbers between service providers.
- c. ESN/MEIN: The Electronic Serial Number (ESN) is the

unique identification number built by the manufacturer into every phone. In GSM phones this identifier is called a Mobile Equipment Identification Number (MEIN).

- d. SysID/NetID: The SysID is the FCC-assigned identifier for the Cell Service Provider. The NetID is the number used by the Cell service provider to designate the intra-carrier network which includes home station, technology, and other critical features.
- e. Internet Browser. There are over a dozen popular web browsers for cell phones. Some are product specific (i.e., Safari for Apple iPhones; Nokia series 40; Blackberry Browser, et al.). Others are more generic: Opera Mobile, Openwave, IE Mobile (from Microsoft).
- f. Security Locks. Most cell phones have the capability to be “locked”. That is, a password or other security device is required to operate them.
- g. Broadband support. Although current cell phones are not true broadband devices, there are technical specifications that allow many (most) of them to communicate with broadband sources such as cable/satellite television, movie downloads, etc. Some of the specifications are (in evolutionary order):
  - i. 1xRTTC
  - ii. CDMA2000
  - iii. 1xEVDO
  - iv. HSDPA
  - v. There may be some others. The technology is constantly evolving.
- h. MP3. This is the Internet standard for transportable (and playable) music files. MP3 files are highly compressed with surprising resolution.

**B. EPO#2: LOCATE ON THE INTERNET THE WEB PAGE WHICH DETAILS THE SPECIFICATIONS AND FEATURES OF YOUR CELL PHONE.**

1. The second part of the laboratory exercise is to have the students access their cell phone site on the Internet and compare the answers to the specification questions with the specs provided.
2. As an example, the web site for a Motorola RazR model V3 is



[http://www.motorola.com/mdirect/manuals/V3\\_9501A42A.pdf](http://www.motorola.com/mdirect/manuals/V3_9501A42A.pdf)

3. Encourage the students to download the technical reference manual (or Users Manual) for their specific phone.

### III. SUMMARY

#### A. REVIEW OF PERFORMANCE OBJECTIVES

EPO 1: Identify the technical features and specifications of your personal cell phone.

EPO 2: Locate on the Internet the web page which details the specifications and features of your cell phone.

#### B. REVIEW OF TEACHING POINTS

An understanding of cell phone technology starts with an understanding of the user's own cell phone. Ask the students the following questions:

- a. Did you find any features of your cell phone of which you were unaware?
- b. Are there any features of your cell phone previously unused that you plan to begin using in the future?

### IV. APPLICATION

#### A. LABORATORY

This entire course is a laboratory exercise.

#### B. PRACTICAL EXERCISE

NONE

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None

## ATTACHMENTS

1. 1. Laboratory Instrument: "Know Your Cell Phone"

(Attachment 1)

### Mobile Device Investigations Program

*Technical Operations Division  
Federal Law Enforcement Training Center*

#### Know Your Cell Phone

*The objectives of this exercise are two-fold: to enable you to determine the capabilities of your personal cell phone; and to provide experience in navigating through the various levels of cell phone menu selections:*

Your Name: \_\_\_\_\_

Cell Phone Service Provider: \_\_\_\_\_

Cell Phone Manufacturer: \_\_\_\_\_ Model: \_\_\_\_\_

Cell Technology (check all that apply):

- TDMA
- CDMA
- GSM
- iDEN
- PCS

MIN/MDN (10-digit Number): \_\_\_\_\_ ESN/(MEIN): \_\_\_\_\_

What is your Home Site Network Registration? Sys ID: \_\_\_\_\_ Net ID: \_\_\_\_\_

Is your phone Internet Compatible?  Yes  No

If 'Yes': Browser Name: \_\_\_\_\_ Version: \_\_\_\_\_

Does your phone have Voice Recording Capability?  Yes  No

If 'Yes', how many Voice Recordings are in memory? \_\_\_\_\_

Does your phone have a security 'Locking' feature?  Yes  No

If 'Yes', what is the current setting?  Locked  Unlocked

Does your phone have Broadband capability (TV, movies, etc.)  Yes  No

If 'Yes', what data broadband standard does your phone use?

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- 1xRTTC                       CDMA2000                        1xEVDO                       HSDPA  
 Don't Know

Who is your Broadband service provider ? \_\_\_\_\_

Does your phone have 'MP3' capability?  Yes                       No

If 'Yes', how many MP3 files are in your library? \_\_\_\_\_

How many graphics are in your photo library? \_\_\_\_\_   I don't have any

Does your phone have Digicam capability?                       Yes                       No

If 'Yes', how many movie clips are in your library? \_\_\_\_\_

Which of the following utilities (tools) are on your phone?

- Calculator
- Appointment Calendar
- Alarm Clock
- Currency Converter
- 'Airplane Mode'
- Other \_\_\_\_\_

Does your phone have Voice Mail?                        Yes                       No

Does your phone have Text Messaging?                        Yes                       No

How many entries are in your Contacts file? \_\_\_\_\_

How many 'midi' Ringtones does your phone have? \_\_\_\_\_

Can your phone be interfaced (connected) to a computer?   Yes                       No

What phone number do you call for tower (or 'Roaming') upgrade? \_\_\_\_\_

What is the Internet address for your phones support site?

(If you don't know, find it.)

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