



## ***Instructor Guide***

### ***AN/GSN-16 SURVEY SET, INTRODUCTION***

---

<b><i>Lesson Title:</i></b>	Introduction
<b><i>Summary:</i></b>	The purpose of this lesson is to provide the students with the understanding of administrative and course guidelines for the AN/GSN-16 Survey Set Operator Course.
<b><i>Action:</i></b>	Understand administrative and course guidelines for the AN/GSN-16 Survey Set Operator Course.
<b><i>Conditions:</i></b>	In a classroom environment, given TM 5-6675-389-10, a student guide and instruction.
<b><i>Standard:</i></b>	Demonstrated understanding of administrative and course guidelines for the AN/GSN-16 Survey Set Operator Course, and answered all questions correctly throughout the instruction.
<b><i>Type Presentation:</i></b>	Conference
<b><i>Time Allotted:</i></b>	0.5 Hr. Classroom/Conference
<b><i>Instructors Required:</i></b>	2
<b><i>Maximum Students:</i></b>	14
<b><i>MOS:</i></b>	Technical Engineer 12T
<b><i>Instructional Materials:</i></b>	Instructor Guide, Student Guide, TM 5-6675-389-10, laptop computer, and projector with screen
<b><i>Facility:</i></b>	Classroom with a minimum of 14 seats and capable of providing support for required instructional equipment
<b><i>Equipment:</i></b>	No equipment required
<b><i>Student Uniform:</i></b>	Military – Duty Uniform
<b><i>Personal Protective Equipment:</i></b>	No requirements
<b><i>Equipment Condition:</i></b>	Before start of class, place Li-Ion batteries on charger, so that batteries will be available for training when needed.



## INTRODUCTION

### I. INTRODUCTION

**Instructor Note:** Show Slide 1-1.

**Instructor Note:** Read motivator to the class.

Welcome to the New Equipment Training Course for AN/GSN-16 Surveying Set. This course will provide you with the knowledge and skills needed to identify key components, maintain, move, place into operation, conduct surveying operations, and recovery of the equipment after operations. Your knowledge level will be assessed through a practical exercise at the end of the course.

**Instructor Note:** Show Slide 1-2.

**Instructor Note:** Read and explain the lesson objective to the class.

<b>ACTION:</b>	<i>Understand administrative and course guidelines for the AN/GSN-16 Survey Set Operator Course.</i>
<b>CONDITIONS:</b>	<i>In a classroom environment, given TM 5-6675-389-10, a student guide and instruction.</i>
<b>STANDARD:</b>	<i>Demonstrated understanding of administrative and course guidelines for the AN/GSN-16 Survey Set Operator Course, and answered all questions correctly throughout the instruction.</i>

**Instructor Note:** Show Slide 1-3.

**Instructor Note:** Read the below introduction to the students.

In this lesson, we will cover the following topics:

- A. Introductions and Orientation
- B. Course Overview
- C. Course Schedule
- D. Course Standards
- E. How to Use This Manual
- F. Lesson Review – Check on Learning



## **PRESENTATION**

---

### **II. PRESENTATION**

#### **A. INTRODUCTIONS AND ORIENTATION**

**Instructor Note:** Show Slide 1-4.

**Instructor Note:** Follow Unit or Local SOP

1. Introduce instructors and points of contact for the course.
2. Discuss classroom rules. Cell Phones - notify students that cell phones should be turned off or set to silent ringer during periods of instruction.
3. Orient the class with where the classroom, training area, restrooms, break areas, and smoking areas are designated.
4. Instruct the class on emergency contingency plans for fire, severe weather and medical emergency situations.

#### **B. COURSE OVERVIEW**

**Instructor Note:** Show Slide 1-5.

**Instructor Note:** Explain that the course will consist of these lessons and give a brief description of each lesson.

- Lesson 1 – Introduction
- Lesson 2 – Safety
- Lesson 3 – Equipment Description and Theory of Operation
- Lesson 4 – Equipment Identification
- Lesson 5 – Controls and Indicators
- Lesson 6 – PMCS
- Lesson 7 – Assembly and Preparation for Use
- Lesson 8 – Mission Planning
- Lesson 9 – Survey Operations
- Lesson 10 – Data Management



- Lesson 11 – Communications
- Lesson 12 – Troubleshooting

**C. COURSE SCHEDULE**

**Instructor Note:** Show Slides 1-6 thru 1-8.

**Instructor Note:** Review schedule with students and answer their questions pertaining to the schedule.

Class Time Hours	Lesson Number	Unit of Instruction	Class room	Demo	Hands On	Total Hours
<b>Day 1</b>						
<b>0800-0840</b>	<b>1</b>	<b>COURSE OVERVIEW</b>	<b>0.6</b>			<b>0.6</b>
	1	INTRODUCTION AND ORIENTATION	0.1			
	1	COURSE OVERVIEW	0.1			
	1	COURSE SCHEDULE	0.1			
	1	COURSE STANDARDS	0.1			
	1	HOW TO USE THIS MANUAL	0.1			
	1	LESSON REVIEW	0.1			
<b>0840-0900</b>	<b>2</b>	<b>SAFETY</b>	<b>0.4</b>			<b>0.4</b>
	2	INTRODUCTION	0.1			
	2	EXPLANATION OF SAFETY WARNING ICONS	0.1			
	2	GENERAL SAFETY WARNING DESCRIPTIONS	0.1			
	2	LESSON REVIEW	0.1			
<b>0900-0940</b>	<b>3</b>	<b>EQUIPMENT DESCRIPTION AND THEORY OF OPERATION</b>	<b>0.6</b>			<b>0.6</b>
	3	INTRODUCTION	0.1			
	3	SYSTEM CAPABILITIES	0.1			
Class Time Hours	Lesson Number	Unit of Instruction	Class room	Demo	Hands On	Total Hours
	3	SYSTEM MAJOR COMPONENTS	0.1			
	3	THEORY OF OPERATION	0.1			
	3	SECURITY	0.1			
	3	LESSON REVIEW	0.1			
<b>0940-1030</b>	<b>4</b>	<b>COMPONENT IDENTIFICATION</b>	<b>0.2</b>	<b>0.7</b>		<b>0.9</b>
	4	INTRODUCTION	0.1			
	4	COMPONENT IDENTIFICATION		0.7		
	4	LESSON REVIEW	0.1			
<b>1030-1130</b>	<b>5</b>	<b>CONTROLS AND INDICATORS</b>	<b>1.0</b>			<b>1.0</b>
	5	INTRODUCTION	0.1			
	5	EQUIPMENT CONTROLS AND INDICATORS	0.4			
	5	SOFTWARE CONTROLS AND INDICATORS	0.4			
	5	LESSON REVIEW	0.1			



Instructor Guide - Lesson 1 - AN/GSN-16 Survey Set Operators Course

	5	LUNCH				1.5
<b>1300-1700</b>	<b>6</b>	<b>PREVENTIVE MAINTENANCE CHECKS AND SERVICES</b>	<b>0.5</b>		<b>3.5</b>	<b>4.0</b>
	6	INTRODUCTION	0.1			
	6	PMCS	0.1		2.5	
	6	GNSS CONTROLLER SELF TEST	0.1		0.5	
	6	GNSS CONTROLLER POWER OFF	0.1		0.5	
	6	LESSON REVIEW	0.1			
<b>Day 2</b>						
<b>0800-1200</b>	<b>7</b>	<b>ASSEMBLY AND PREPARATION FOR USE</b>	<b>0.5</b>	<b>1.0</b>	<b>2.5</b>	<b>4.0</b>
	7	INTRODUCTION	0.1			
	7	SITING REQUIREMENTS	0.2			
<b>Class Time Hours</b>	<b>Lesson Number</b>	<b>Unit of Instruction</b>	<b>Class room</b>	<b>Demo</b>	<b>Hands On</b>	<b>Total Hours</b>
	7	TRIPOD MOUNTED STATION SETUP		0.2	0.5	
	7	MEASURE SLANT DISTANCE		0.2	0.5	
	7	ANTENNA POLE MOUNTED STATION SETUP		0.2	0.5	
	7	VEHICLE MOUNTED STATION SETUP		0.2	0.5	
	7	CONNECT TO SINCGARS RADIO		0.2	0.5	
	7	LESSON REVIEW	0.2			
	7	Lunch				1.5
<b>1330-1530</b>	<b>8</b>	<b>MISSION PLANNING</b>	<b>0.5</b>	<b>0.75</b>	<b>0.75</b>	<b>2.0</b>
	8	INTRODUCTION	0.25			
	8	AUTONOMOUS ROVER STATION		0.25	0.25	
	8	SET SATELLITE STATUS		0.25	0.25	
	8	GNSS MISSION PLANNING		0.25	0.25	
	8	LESSON REVIEW	0.25			
<b>1530-1630</b>	<b>9</b>	<b>SURVEY OPERATIONS</b>	<b>0.75</b>	<b>2.25</b>	<b>7.0</b>	<b>10.0</b>
	9	INTRODUCTION	0.25			
	9	JOB SETUP		0.25	0.5	
<b>Day 3</b>						
<b>0800-1700</b>	<b>9</b>	<b>SURVEY OPERATIONS - CONTINUED</b>				
	9	STATIC SURVEY		0.25	0.5	
	9	FAST STATIC SURVEY		0.25	0.5	
	9	STORE POINTS		0.25	0.5	
	9	KINEMATIC SURVEY		0.25	1.0	
	9	LUNCH				1.5
	9	REAL-TIME DGPS SURVEY		0.25	1.5	
	9	NAVIGATION		0.25	0.5	
<b>Class Time Hours</b>	<b>Lesson Number</b>	<b>Unit of Instruction</b>	<b>Class room</b>	<b>Demo</b>	<b>Hands On</b>	<b>Total Hours</b>
	9	TOTAL STATION SURVEY		0.5	1.5	
<b>Day 4</b>						
<b>0800-0915</b>	<b>9</b>	<b>SURVEY OPERATIONS - CONTINUED</b>				
	9	TOTAL STATION SURVEY			0.5	



	9	LESSON REVIEW	0.5			
<b>0915-1115</b>	<b>10</b>	<b>DATA MANAGEMENT</b>	<b>2.0</b>			<b>2.0</b>
	10	INTRODUCTION	0.1			
	10	CONNECT DATA HUB/ HARD DRIVE	0.2			
	10	NAVIGATE FILES EXPLORER	0.2			
	10	IMPORT / EXPORT ASCII FILE	0.2			
	10	TRANSFER JOB DATA	0.2			
	10	IMPORT / EXPORT DRAWING FILE	0.2			
	10	IMPORT GEOPDF	0.2			
	10	COPY FILE	0.2			
	10	DELETE INDIVIDUAL, ALL, EMPTY FOLDERS	0.2			
	10	CLEAR ALL MISSION DATA	0.2			
	10	LESSON REVIEW	0.1			
	10	LUNCH				1.5
<b>1245-1445</b>	<b>11</b>	<b>COMMUNICATIONS</b>	<b>2.0</b>			<b>2.0</b>
	11	INTRODUCTION	0.2			
	11	LOAD CV KEYS	0.2			
	11	VERIFY CV KEYS	0.2			
	11	HOT START DAGR TO GNSS CONTROLLER	0.2			
	11	HOT START GNSS CONTROLLER TO GNSS CONTROLLER	0.2			
<b>Class Time Hours</b>	<b>Lesson Number</b>	<b>Unit of Instruction</b>	<b>Class room</b>	<b>Demo</b>	<b>Hands On</b>	<b>Total Hours</b>
	11	SOFTWARE ZEROIZE	0.2			
	11	NO POWER ZEROIZE	0.2			
	11	EMERGENCY ZEROIZE	0.2			
	11	OPERATE UNDER UNUSUAL CONDITIONS	0.2			
	11	LESSON REVIEW	0.2			
<b>1445-1645</b>	<b>12</b>	<b>TROUBLESHOOTING</b>	<b>0.5</b>		<b>1.5</b>	<b>2.0</b>
	12	INTRODUCTION	0.25			
	12	TROUBLESHOOTING PROCEDURES			0.25	
	12	TROUBLESHOOTING SYMPTOM INDEX			0.5	
	12	TROUBLESHOOTING SYMPTOMS			0.75	
	12	LESSON REVIEW	0.25			
<b>Day 5</b>						
<b>0800-1530</b>	<b>PE</b>	<b>PRACTICAL EXERCISE</b>	<b>0.5</b>		<b>5.5</b>	<b>6.0</b>
	PE	INTRODUCTION	0.25			
	PE	PRACTICAL EXERCISE			3.0	
	PE	LUNCH				1.5
	PE	PRACTICAL EXERCISE			2.5	
	PE	AFTER ACTION REVIEW	0.25			
	PE	INVENTORY EQUIPMENT			0.5	
	PE	COURSE CRITIQUE, CLOSE OUT	0.5			



## D. COURSE STANDARDS

**Instructor Note: Show Slide 1-9.**

1. Absences will be based on case-by-case basis and can affect completion of the course.
2. A Cumulative practical exercise will be conducted and completed on final day of training.
3. Student must demonstrate an understanding of equipment operation during practical exercises throughout the week.

## E. HOW TO USE THIS MANUAL

**Instructor Note: Show Slide 1-10**

1. Chapter 1 - General Information, Equipment Description, and Theory of Operation
2. Chapter 2 – Instructions
3. Chapter 3 - Troubleshooting Procedures
4. Chapter 4 - PMCS Maintenance Instructions
5. Chapter 5 - Maintenance Instructions
6. Chapter 6 - Destruction of Equipment to Prevent Enemy Use
7. Chapter 7 - Supporting Information

**Instructor Note: Show Slide 1-11**

8. Each WP is numbered sequentially throughout the TM using a four-digit number beginning with WP 0001. Go to the Table of Contents and you will see that the very first WP is numbered "0001." The second WP is numbered "0002."
9. The WP number is located at the top of each page. It is also located at the bottom of the page as part of the WP page number. For example, the page number for the first page of the second WP of this TM is 0002-1.
10. If you look at a few WPs you will notice that each WP starts with page number



1 as shown above. Each WP starts on a right-hand page. This was done so you can remove a single WP from your paper TM if needed for a particular task.

**Instructor Note:    *Show Slide 1-12***

11. While using the TM, one WP may refer you to another WP (e.g., WP 0010 refers to "Add Oil to Water Pump [WP 0009]"). Turn to the referenced WP, complete the requested task (you may need to flip through the WP to find the task), then return to the original WP and continue with the task.
12. Blank WP pages are assigned a number, but it appears on the preceding or following page. For example, if page 0001-10 of a WP is blank, page 0001-9 will have number 0001-9/10 blank; or if page 0001-1 of a WP is blank, page 0001-2 will have number 0001-1 blank/2.
13. Each task in a WP containing step-by-step maintenance or troubleshooting procedures will end with the words END OF TASK, and each WP ends with the statement END OF WORK PACKAGE. Think of each WP as a small, stand-alone TM.





## **FINAL REVIEW**

---

### **III. FINAL REVIEW**

**Instructor Note:** *Show Slide1-11.*

#### **A. SUMMARY**

1. Introductions
2. Course Overview
3. Course Schedule
4. Course Standards
5. How to Use This Manual
6. Lesson Review – Check on Learning

**Instructor Note:** *Show Slide1-12.*

#### **B. STUDENT QUESTIONS**

**Instructor Note:** *Determine if the students have learned the material presented by soliciting student questions and explanations. Ask the students questions, and correct misunderstandings.*

**Instructor Note:** *Read the closing statement to the class.*

#### **C. CLOSING STATEMENT.**

This lesson has provided you (the student) with instruction on understanding the administrative and course guidelines for the AN/GSN-16 Survey Set Operator Course.