



ELECTRONIC COMMUNICATION AND MULTIMEDIA EQUIPMENT SERVICING

NTQF Level-II

Learning Guide-27

Unit of Competence: Install and Repair Antenna and Satellite System
Module Title: Installing and Repairing Antenna and Satellite System
LG Code: EEL CMS2 M08 LO1- LG-270919
TTLM Code: EEL CMS2 M08 TTLM 1019 v1

LO1: Prepare unit and workstation



Instruction Sheet

Learning Guide #27

This learning guide is developed to provide you the necessary information regarding the following **content coverage** and topics –

- Making Workplace ready in accordance with work / job requirements
- Making ready necessary tools, test instruments and PPE in line with job requirements
- Visually inspecting and checking Units for physical defects
- Finding service manuals and service information required for the job acquired at commencement of activities

This guide will also assist you to attain the learning outcome stated in the cover page. Specifically, **upon completion of this Learning Guide, you will be able to:**

- Make Workplace ready in accordance with work / job requirements
- Make ready necessary tools, test instruments and PPE in line with job requirements
- Visually inspect and check Units for physical defects
- Find service manuals and service information required for the job acquired at commencement of activities

Learning Instructions:

Learning Instructions:

1. Read the specific objectives of this Learning Guide.
2. Follow the instructions described in number 3 to 20.
3. Read the information written in the information “Sheet 1, Sheet 2, Sheet 3 and Sheet 4”.
4. Accomplish the information “Sheet 1, Sheet 2, Sheet 3, Sheet 4, Sheet 6 and Sheet 6”.
5. Try to answer self-check, you can ask your trainer for correction. If you finished answering the Self-check, take correction or explanation from your trainer if it is not clear.
6. If you scored a satisfactory evaluation proceed to “Information Sheet 2”.
7. Submit your accomplished Self-check. This will form part of your training portfolio.
8. Read the information written in the “Information Sheet 2”. Try to understand what are being discussed. Ask you Instructor for assistance if you have hard time understanding them.
9. Read the information written in the “Information **Sheets 3**”. Try to understand what are being discussed and ask you teacher for assistance if you have hard time understanding them.



Information Sheet-1	Make Workplace ready in accordance with work / job requirements
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1.1. Make Workplace ready in accordance with work / job requirements

A workplace is a location where someone works for his or her employer, a place of relationship between two parties, usually based on a contract where work is paid for, where one party, which may be a corporation, for profit, not-for-profit organization.

Job requirements are qualifications and skills necessary for a certain position, usually written in form of a list that contains the most important qualifications that a candidate must possess in order to be able to perform certain job duties.

The qualifications include:

- ✓ Work experience - types and amounts (years) of work experience
- ✓ Skills (soft skills and/or technical skills)
- ✓ Specific knowledge
- ✓ Education level and type
- ✓ Professional licenses, accreditations and certifications
- ✓ Personal qualities and attributes
- ✓ Languages
- ✓ Physical abilities





Information Sheet-2

Make ready necessary tools, test instruments and PPE

- 1.2. Make ready necessary *tools, test instruments* and *PPE* in line with job requirements

Necessary tools includes the those what we use for dish installation

- ✓ Open-end wrench, or open-ended spanner: used for loosening and tightening bolts and nuts during dish installation.
- ✓ The open-end wrench has a long, smooth shank providing the user with a better gripping surface.



Figure. Open-end wrench

A box end wrench surrounds the nut, bolt head, or stud on all sides. Box wrench openings are offset from the shank by 15 degrees to give more room for your knuckles or to give clearance over obstructions.



Figure. box end wrench



Figure. split-box wrench

Combination Wrench: The combination wrench has a box wrench and an open-end wrench on opposite sides of the same tool. The two ends are usually the same size.



Figure. combination wrench

The socket wrench consists of a round metal sleeve with a square opening in one end for insertion of a handle, and a 6- or 12-point wrench opening in the other.



A) Four-way socket wrench.



C) 90-degree offset handle socket wrench.

a) Pocket Knife

Pocket knives are used for light cutting, removing insulation of coaxial cable, cutting string, and whittling. They are not suitable for heavy work.



The flat nose pliers have flat serrated jaws, a fixed pivot, and curved handles that may have insulated sleeves. These pliers are used to pull coaxial cable for in narrow place.



Fig. Long nose (needle nose) pliers.

a) Diagonal Cutting Pliers

The diagonal cutting pliers have a fixed pivot. The jaws are offset by about 15 degrees and are shaped to give enough knuckle clearance while making flush cuts. The diagonal cutting pliers are used for cutting small, light materials, such as wire, cotter pins, and similar materials.



Figure. Diagonal cutting pliers..

screwdriver

Sorted screw driver means different size and type in one set. A screwdriver is a device used to insert and tighten screws or to loosen and remove screws.



Fig. Sorted screw driver

Soldering Irons

Soldering Irons: - soldering irons are device that convert electrical energy to heat energy through systematical designed high resistive wire as heating elements. They are used to solder electronic circuits or connecting wires and other materials using soldering leads



Fig. soldering iron



Multimeter

A multi-meter is a device which is used to measure several electrical quantities such as current, voltage, resistance, inductance, capacitance, circuits, and electrical frequency.



Blower

An air blower is a machine used for generating flow of air at substantial pressure. The air flow generated is used for different purposes such as small car cleaning blowers, vacuum cleaners, air conditions etc. Depending on the application requirement air flow and pressure may vary.





Pump/sucker

The desoldering pump is otherwise called the "solder sucker," it is designed with a spring-loaded plunger. Therefore, the desoldering pump is a device used in achieving the removal of solder from a printed circuit board. It is a type of device used for this purpose, and it is of two kinds, which are the plunger style and the bulb style. So, if perhaps you are interested in a quick, large job performing device, then it comes to a significant consideration.



Satellite finder

A **satellite finder** (or **sat finder**) is a satellite signal meter used to accurately point satellite dishes at communications satellites in geostationary orbit.



Fig. Different types of satellite finder

Drill

A **drill** is a tool primarily used for making round holes or driving fasteners. It is fitted with a bit, either a drill or driver, depending on application, secured by a chuck. Some powered drills also include a hammer function.





1.3. Visually inspect and check Units for physical defects

- External visual inspection is a process of verifying the attributes of parts such as Device condition, part markings, and evidence of the device, Ports conditions, dimensions and surface quality. Visual inspection can be used for internal and external surface inspection of a variety of equipment types, including storage tanks, pressure vessels, piping, and other equipment.
- Visual Inspection, used in maintenance of facilities, mean inspection of equipment and structures using either or all of raw human senses such as vision, hearing, touch and smell and/or any non-specialized inspection equipment.
- **Visual Inspection**, or Visual Testing (VT), is the oldest and most basic method of inspection. It is the process of looking over a piece of equipment using the naked eye to look for flaws. It requires no equipment except the naked eye of a trained inspector.



Fig. Inspection using different methods



1.4. Find service *manuals* and *service information* required for the job acquired at commencement of activities

Factory service manuals (FSM) are the manuals provided by manufacturers which cover the servicing, maintenance and repair of their products. They were not originally offered to the public as they were developed for the dealerships so that their mechanics were able to fix their own products.

Many after-market manuals are available, with most of them referencing the FSM for topics such as torque specifications, dimensions and part numbers. The Manual usually contains all information required to assist service engineers with all work, repair and maintenance on their device. The repair documentation provides detailed information regarding repair procedures, installation instructions, circuits and diagrams and troubleshooting information.

The purpose of service document is to aid in the troubleshooting and repair of the Satellite receiver and Antenna System. The intended audience is trained service technicians. All companies and service personnel using this document must have a signed non-disclosure agreement on file with the device producer Company. But here putting all document or all service manual is too hard, but let us see the content of service manual. Find specific service manual for more information

- Installation Instructions
- User Tips
- General Warning Information
- Set-Up
- Operation
- General Maintenance
- Information Trouble Shooting
- Part Specifications
- Warranty

Service information

- job report sheets

A job sheet is a document (usually just a page) containing instructions to help a worker do his job. It also contains details such as time it takes to perform a job and the materials needed or used for a job



Edit Booking: Moondana Films Inc. / Return to the Moon - Mini Series (15) / EPISODE 2 / Post-Production / first cut

Wednesday 22 April < 3 > Friday 24 April (09:00 > 18:00)

Name: first cut Note: Invoice Note:

Fixed Price:

Templates: Shooting Report, Production Plan Entries, Production Breakdown, Equipment checklist, etc.

Elements / Options: Project, Company Logo, Company Name, Contact Name, etc.

Preview: Job Sheet (table with columns: Job, Location, Start, End, etc.)

Buttons: Create Dispatch, Project

Dropdown Menu: Project Report - All Days, Project Report - Single Day, Html Report, Run Script



DAILY ACTIVITY REPORT

DATE:
 NAME:
 TASK(S) PERFORMED:

#:

NAME	JOB TITLE	HOURS		HOURLY RATE		NOTE
		REG	OT	REG	OT	

Notes:

SUPERVISOR		DATE
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Tired of working with reports manually? Status.net is a modern solution to share regular reports and gather insights automatically.

Status.net collects data regularly with scheduled auto reminders. Run powerful reports with export and print features.

- job order**

A work order is usually a task or a job for a customer, that can be scheduled or assigned to someone. Such an order may be from a customer request or created internally within the organization. Work orders may also be created as follow ups to Inspections or Audits. A work order may be for products or services.



Maintenance Work Order Form

Client/Worksite Details	
Client Name:	Client Phone Numb:
Client Address:	Client Email:
Order Details	
Date Issued:	Work Order Number:
Issued By:	Work Performed by:
Description of Work Required:	
Material Required:	
Completion Information	
Date Completed:	Time Required:
Materials Used:	
Remarks:	
EMPLOYEE SIGNATURE:	Date:
SUPERVISOR SIGNATURE:	



Job order form of agreement

SECTION 00500 JOB ORDER CONTRACT

A. EFFECTIVE DATE:

This CONTRACT is entered into by and between the Owner and the Job Order Contractor as Contract No. _____, and shall be effective as of _____, 20____.

B. OWNER:

MARICOPA COUNTY
c/o Facilities Management Department
401 West Jefferson Street
Phoenix, Arizona 85003

C. JOB ORDER CONTRACTOR:

Office: (_____); Fax: (_____); E-Mail: (_____).

D. RECITALS:

The scope of work and specifications for a broad range of services will be identified in individual Task Orders which will be issued by the Owner from time to time. See EXHIBIT D hereto.

NOW THEREFORE, intending to be legally bound and for valuable consideration, the receipt and sufficiency of which are acknowledged, the Owner and Job Order Contractor agree as follows:

E. AGREEMENT:

Article I. THE CONTRACT

- 1.1** The Task Order and other Contract Documents explained in Section 7.1 below and the definitions which are contained Section 00700, Exhibit A, govern this Job Order Contract.

Article II. THE WORK

- 2.1** The Job Order Contractor shall execute the entire Work described by each Task Order, including work which is reasonably inferable and necessary to produce the results intended by the Contract and the Task Order.

Article III. CONTRACT TIME

- 3.1** The Job Order Contractor shall have access to the area of the Work effective from the date of the Notice to Proceed for the assigned Task and shall achieve Substantial Completion and Final Completion of the Work no later than the performance period specified in each Task Order



Job ORDER REQUEST FORM
HCCS – MAINTENANCE DEPARTMENT
West Loop Center
FAX NO. 713-718-7932

Requester Name: _____ Date: _____

Department: _____ Telephone: _____

Location: _____ Urgent:

Yes _____ No _____

Room: _____

Description of Work Order Requested:

-----Maintenance Use Only-----

✓ **How to Write an Order Application Form for a Teaching Job**

It's important that you know how to write an order application for a teaching job if that's the career path you've chosen. You might have to scan through additional order form templates after this one, but we do have a couple of tips on how to write one. Be sure to keep these in mind: The manner of your application and the words must be polite and formal. Include your capabilities and skills to impress your future employers. Unlike a product order form, your application form should be direct and concise.



- **bill of materials**

A bill of materials (BOM) can define products as they are designed (engineering bill of materials), as they are ordered (sales bill of materials), as they are built (manufacturing bill of materials), or as they are maintained (service bill of materials). The different types of BOMs depend on the business need and use for which they are intended

A bill of materials or product structure (sometimes bill of material, BOM or associated list) is a list of the raw materials, sub-assemblies, intermediate assemblies, sub-components, parts, and the quantities of each needed to manufacture an end product

MATERIAL REQUISITION FORM
(IN-STOCK ITEMS ONLY)

DATE: _____ WORK ORDER #: _____ STORE ISSUE #: _____

PERSON (S) PREPARING REQUISITION: _____

TRADE: _____ CAMPUS ID OR LOCATION: _____

BILL TO ACCOUNT #: _____

INVENTORY MATERIAL ITEM (S) NEEDED FOR PROJECT

STOCK #	QTY.	UNIT OR UOM	ITEM DESCRIPTION

DEPARTMENT SUPERVISOR APPROVAL SIGNATURE: _____

PERSON (S) RECEIVING MATERIAL SHOULD VERIFY ITEMS ARE CORRECT BEFORE LEAVING WAREHOUSE)



- customer index

The Customer Satisfaction Index (CSI) is an economic indicator that measures the satisfaction of consumers across the economy. CSI data is used by researchers, corporations, government agencies, market analysts and investors, industry trade associations, and consumers.

CSI uses existing customer satisfaction drivers / attributes and applies a hierarchical approach to measure the relationships between the items

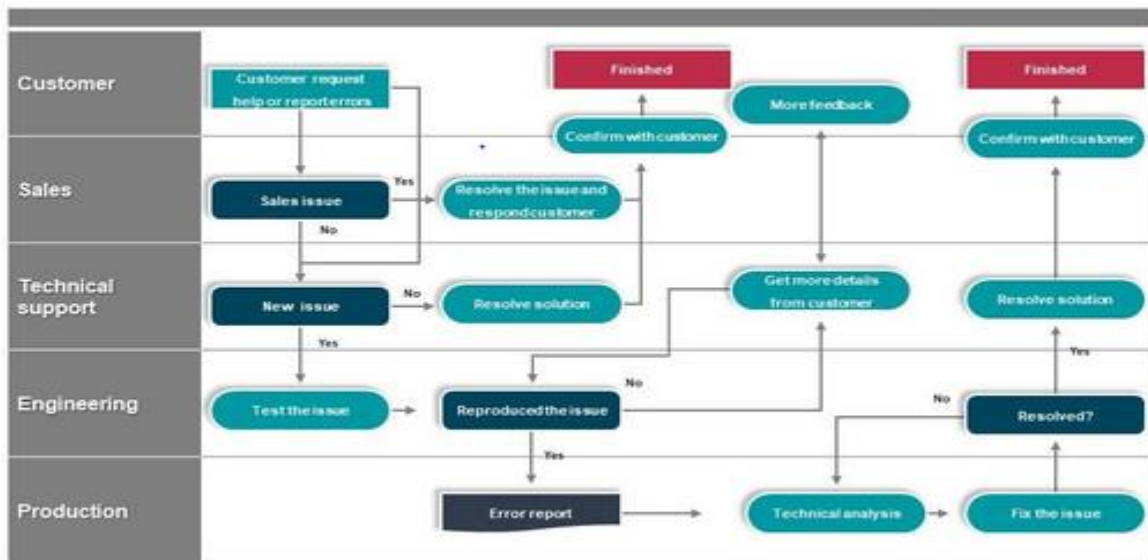




- **service flowchart**

The concept of service flow chart also known as process flow chart or process flow diagram constitutes a picture of the separate steps of a process in a sequential order. The flowcharting process can be considered as a tool useful for developing an understanding of how a process is done. It can be useful in any phase of business or even in personal life for that matter. The type of process can be anything, such as manufacturing processes, administrative services, project plans, etc. But it is most useful in services and is plotted regularly in services.

Customer Service Process Flow Chart Example



This slide is 100% editable. Adapt it to your needs and capture your audience's attention.

- **Stock and inventory record**

- ✓ A stock record is a detailed listing of securities held by a brokerage firm on behalf of customers. The stock record displays the names of the real and beneficial owners, amounts and locations of all securities held by the firm.
- ✓ Inventory record is to identify and quantify all records created or maintained by your department or office. The records inventory is used to collect information about your



records including type, date range, format, volume, storage location, and applicable records series information

1. Agency		2. Division/Section		3. Location of Records	
4. Records Series Title					
5. Records Series Description. Include contents (e.g. contracts, reports, applications, correspondence), purpose, and form numbers.					
6. <input type="checkbox"/> Original File <input type="checkbox"/> Duplicate File		7. If duplicate, list location of original file.			
8. STORAGE MEDIA (Check all that apply)			9. DATA PRIVACY CLASSIFICATIONS		
<input type="checkbox"/> Paper <input type="checkbox"/> Microfilm (not COM) <input type="checkbox"/> Computer Output Microfilm (COM) <input type="checkbox"/> Electronic (Tapes, Disks)			<input type="checkbox"/> Other, including: <input type="checkbox"/> Photographs <input type="checkbox"/> Computer Cards <input type="checkbox"/> X-Rays <input type="checkbox"/> Slides <input type="checkbox"/> _____		
			Statute Number or Date of Temporary Classification <input type="checkbox"/> Public _____ <input type="checkbox"/> Private _____ <input type="checkbox"/> Confidential _____ <input type="checkbox"/> Nonpublic _____ <input type="checkbox"/> Protected Nonpublic _____		
10. RETENTION REQUIREMENTS		YEARS	CITATION	11. RECOMMENDED RETENTION PERIODS	
A. Federal Law				A. Agency Office	
B. State Law				B. Agency Storage	
C. Statute of Limitations				C. State Records Center (State Agencies Only)	
D. Audit Period				D. Total Retention (A + B + C)	
E. Administrative Needs					
12. A vital record is essential to the continuation or resumption of your operations after a disaster.					
Are any documents in this records series considered vital? <input type="checkbox"/> Yes <input type="checkbox"/> No					
If yes, which documents are vital and why?					
13. VOLUME (See Chart) _____ →					
Office		Storage			
Cubic Feet		Cubic Feet			
Inclusive Dates		Inclusive Dates			
		VOLUME CHART TO DETERMINE CUBIC FEET Letter Size Drawer = 1.5 3X5 Card 12" Row = 0.1 Legal Size Drawer = 2.0 4X6 Card 12" Row = 0.2 Shelving 4' Letter = 2.3 5X8 Card 12" Row = 0.3 Shelving 4' Legal = 3.0 Printouts 12" Stack = 1.25 Records Center Box = 1.0 Transfer Case = 2.5 (12" X 15" X 10") (24" X 16" X 11")			
14. Inventory Completed By (Print Name)		Title	Date	Phone	



- **requisition slips (for acquisition of parts)**

A requisition, in procurement, is a request for goods or services made by an employee to the person or department in a company that is responsible for purchasing. If the request is approved, that entity will submit a purchase order (PO) to a supplier for the goods or service.

Document generated by a user department or storeroom-personnel to notify the purchasing department of items it needs to order, their quantity, and the timeframe. It may also contain the authorization to proceed with the purchase. Also called purchase request or requisitio



PARTS REQUISITION

R.O # _____

Customer _____ Date _____

Tech # _____ Ser.Writer _____ Tag / Hat # _____

Year _____ Make _____ Model _____

POWER Brakes Steering Windows Doors Tilt Whl.

TRANS Automatic Manual A / C **ENGINE**

Body Code _____

Trim Code _____

Quan.	Part Number	Description	Job / Line #	Price	Amount	Cost

Entered On R.O. _____ Signed _____

Form 350-1

Nap's Dealer Supplies, Inc. • www.napsupply.com • 800.451.3330



Purchase Requisition

From Department
To Purchase Department

No.

Date

Please arrange to purchase the following materials which is required on for utilization against Production Order No. /for Stock.

Particulars of Materials	Code No.	Unit of Quantity	Quantity
			Signature
(To be filled in by the Purchase Department) Purchase Order No. Supplier			

- supplier index