

## SeaBee Voice Response Translator

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### Definitions:

#### Situation

The Translator divides the voice commands that can be used at any given time into ROUTINE, STEEL WORKING, SCHEDULING, REAL ESTATE, INFRASTRUCTURE, SURVEYS, WEATHER, EXISTING BUILDING, SEABEE TERMS, MATERIAL AND WORKER TYPE. In addition, there are Control Commands that allow the user to access Situations and Always Active Commands that can be accessed at any time: “Start I”, “Goodbye,” “Identification,” “Write Quantity,” and “Don’t Understand”. To access Situations, the user must use the Control Command “Situation” and then speak the name of the Situation when prompted. Please note that only one Situation – along with the Control Commands – is available for use at any given time. Please note that after the Control Command “Situation” the unit will enter Standby/Training Mode after five seconds if it does not receive a command to switch to operation, say “Translate” or turn the unit off and on again.

#### Language

The Translator can hold 31 languages at any given time. Currently, Pushto and Tagalog start in its default language, in this case set as Pushto. To change to another language, state the command of the language, e.g., “Tagalog” to select the desired language. When the Control Command “Change Language” is used, the unit will switch to Standby/Training Mode after five seconds if it does not receive a command to switch to another language. To resume operation, say “Translate” or turn the unit off and on again.

#### Default Set

The Translator has one Situation that is labeled as the Default Set. When the Translator is turned on, it will begin operation with this set. In this translator version, ROUTINE is the Default Set. To switch to another Situation, use the Control Command “Situation” followed by the name of the desired Situation when prompted.

#### Voice Prompt Training

The Translator records encoded “templates” of a user speaking voice commands so that it can recognize the commands. This is called Command Training, and it is done by repeating phrases to the speaker. The Translator will first ask the user to speak each phrase in turn, and then the Translator will ask the user to repeat each phrase to ensure that it was recorded properly. If the phrase is not recorded properly, the Translator will state that “The Phrase must be repeated, please try again.”

for the first time, users must record the commands that part of the Initial Training Situation, ROUTINE.

**Multi-User Capability**

This translator has the capability of having the voice of eight different users trained unit is turned on, it will ask for the user’s identification number. Press the red button a number of times, from once to eight, to identify yourself. If the unit will then ask for Initial Training, as described above, or if this has already been done, the unit will be ready to use. Users must always use their own, unique user number when operating the unit.

**Initial Training**

The Translator has a core group of commands – the Control Commands and the Always Active Commands. When a new Translator is turned on, it will enter this mode and train please say the following words: “My Location, ...” and continue through the list of Always Active Commands. Following Initial Training, the Translator will enter the Standby/Training Mode. Then should use the Control Command “Start Training” to record the commands for Other Situations can be trained at this time as well or later as desired.

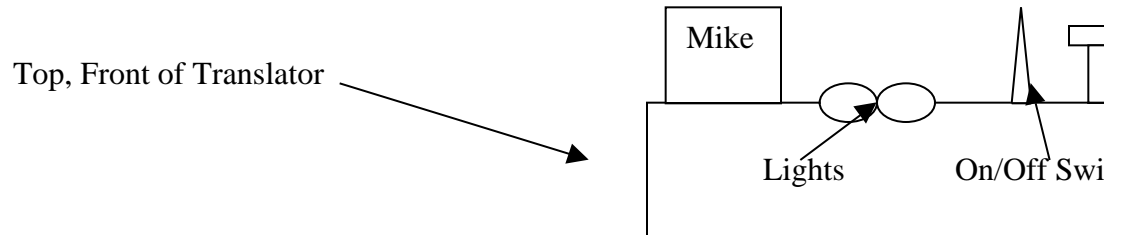
To enter Initial Training after it has been voice trained, first set the unit to Standby/Training Mode by pressing the Red Button once. When the Translator says, “On Standby,” press the Red Button and the Translator will then say, “Initial Training ...” and the user can do the Initial Training.

**Standby/Training Mode**

When the Translator is in Standby/Training Mode, the user can either enter Initial Training by pressing the Red Button down for at least five seconds, or train a Situation by speaking the command, “Start Training.” It will ask, “Which Situation.” The user can then select any of the commands in that group.

**Red Button/Reset**

The Translator has a Red Button that resets it to Standby/Training Mode if it is pres Standby/Training Mode, users can hold the Red Button down for five or more secur Initial Training Mode. This allows users to erase all old trainings and is done when or when a user wants to re-record the voice commands.



**Control Commands:**

**“State My Location”**

Commands the unit to notify the user which situation it is in. For example, response the Routine Situation.

**“Translate”**

Commands the Translator to go from Standby/Training mode to Operational mode. not normally needed, as the unit will enter the operational mode automatically upon complete initial training.

**“Toggle to Standby”**

Commands the unit to go from Operational mode to Standby/Training mode. Pressing translator will accomplish the same thing.

**“Situation”**

Commands the unit to go into the Situation Selection mode. When the unit hears the user then can name any situation listed, and the unit will switch to that Situation selection within five seconds, the unit will go into Standby/Training mode. The user “Translate” command or turn the unit off and on again to enter the Operational Mode.

**“Change Language”**

Commands the unit to go into the Language Selection mode. When the unit hears the user can then use the command for any language available, and the unit will switch doesn't make a selection within five seconds, the unit will go into Standby/Training mode either use the “Translate” command or turn the unit off and on again to enter the Operational Mode.

**“Start Training”** Commands the Translator to begin Voice Prompt Training of one of its Situations. When the user says this command, it responds by asking, “Which Situation.” The user can then say any Situation name to begin Voice Prompt Training of the commands within that Situation.

Note: “Voice Commands” were chosen because they are easier for the VRT to understand. Phrases with 3-4 syllables long are used because they are short and easy to say while also containing enough data for the VRT to understand. Some phrases are slightly different than the translated files. This is similar to the NFL changing “Pass Is Incomplete” and “Pass Is Complete” were being confused by listeners during games.

### **Always Active Commands**

#### **TRANSLATED PHRASES**

*“Greetings”*

“I’m speaking to you through a device that translates select phrases into your language. Please nod your head for yes, shake your head for no, or write down short answers.”

*“Goodbye”*

*“Please show me your identification”*

*“Write the quantity here.”*

*“I don’t understand”*

#### **VOICE COMMANDS**

**“Greetings”**

**“Start Directions”**

**“Goodbye”**

**“Identification”**

**“Write Quantity”**

**“Don’t Understand”**

## Language Selection Commands

<b>VOICE COMMANDS</b>	<b>FILE NAME</b>
<i>“Start Pushto”</i>	<i>LA01.wav</i>
<i>“Start Tagalog”</i>	<i>LA02.wav</i>
<i>“Start Thai”</i>	<i>LA03.wav</i>
<i>“Start Dari Farsi”</i>	<i>LA04.wav</i>
<i>“Start Japanese”</i>	<i>LA05.wav</i>

## Situations

### **ROUTINE**

#### **“Routine”**

Switches to the ROUTINE Situation set from another set.

#### **TRANSLATED PHRASES**

*“Thank you”*

#### **VOICE COMMANDS**

**“Thank you”**

*“Write down the name people call you”*

**“Name called”**

*“Do you speak English”*

**“Speak any English”**

*“What is your telephone number?”*

**“Your Telephone”**

*“I need to get something to eat”*

**“Eat Something”**

*“I need to get something to drink”*

**“Drink Something”**

*“I need to use a lavatory”*

**“Lavatory”**

*“I need to use a phone”*

**“Use a phone”**

*“I need to return to my base location now.”*

**“Go Home Now.”**

## **STEEL WORKING**

**“Steel Working”**

Switches to the STEEL WORKING Situation set from another

**TRANSLATED PHRASES**

**VOICE COMMANDS**

*“How do you measure your rebar? Point to the unit of measure.”*

**“Measure Rebar?”**

*“I would like rebar.”*

**“I Want Rebar.”**

*“What type of rebar do you have? Write down type and quantity.”*

**“Kind of Rebar”**

*“Do you have welding equipment? Point to the picture of what you have.”*

**“Welding equipment”**

*“What type of fuel do you use for your welding? Point to the picture of what you have.”*

**“Welding Fuel”**

*“Do you have flux? Point to the picture of what you have.”*

**“Do You Have Flux”**

## **SCHEDULING**

**“Scheduling”**

Switches to the SCHEDULING Situation set from another

**TRANSLATED PHRASES**

**VOICE COMMANDS**

*“This activity needs to be completed by the date I’m pointing to.”*

**“Completion Date”**

<i>“This item needs to be completed before this other activity”</i>	<b>“Do This First”</b>
<i>“This item cannot be completed before this other activity”</i>	<b>“Other One First”</b>
<i>“We need to complete this project by the date I’m pointing to.”</i>	<b>“Finish by Then”</b>
<i>“Can you expedite the delivery of this material?”</i>	<b>“Expedite This”</b>
<i>“Can you accelerate the completion of this activity?”</i>	<b>“Can You Accelerate”</b>
<i>“When will this equipment be available? Point to the date on the calendar.”</i>	<b>“Available by When”</b>
<i>“When will this equipment be repaired? Point to the date on the calendar.”</i>	<b>“Repaired by When”</b>
<i>“Where can I dispose of this? Point to the map location or write the address.”</i>	<b>“Dispose of This”</b>
<i>“Do you have a part like this?”</i>	<b>“Do You Have This”</b>
<i>“Where can I find a part like this? Please take me there or write the location.”</i>	<b>“Get This Part”</b>
<i>“Please give me directions.”</i>	<b>“Give Me Directions”</b>
<i>“How much does that part/material cost? Write the cost and quantity.”</i>	<b>“What’s the Cost”</b>
<i>“Can you deliver it to our camp?”</i>	<b>“Can you Deliver”</b>
<i>“How much can I get? Please write the quantity here.”</i>	<b>“What’s Available”</b>

**REAL ESTATE**

**“Real Estate”**

Switches to the REAL ESTATE Situation set from another se

**TRANSLATED PHRASES**

**VOICE COMMANDS**

*“I want to lease an area like a soccer field. Show me possible locations on the map.”*

**“Soccer Field”**

*“I want to lease a storage building. Show me possible locations on the map.”*

**“Storage Building”**

*“I want to your lease a school building. Show me possible locations on the map.”*

**“School Building”**

*“I want to lease a business building. Show me possible locations on the map.”*

**“Business Building”**

**INFRASTRUCTURE**

**“INFRASTRUCTURE”**

Switches to the INFRASTRUCTURE Situatio

**TRANSLATED PHRASES**

**VOICE COMMANDS**

*“Where do you get drinking water? Show me on the map.”*

**“Drinking Water”**

*“Do you have access to recycled water? If yes, show me the location on the map.”*

**“Recycled Water”**

*“Are there water pipes in the ground? If yes, show me the location on the map.”*

**“Water Pipes”**

*“Where does your sewage go? Show me on the map any sewage treatment plant, leach fields, gray water.”*

**“Sewage Treatment”**

*“Where does your waste go? Show me on the map any landfill, disposal, trash trucks, dumpster”*

**“Solid Waste”**

*“Are there any major environmental concerns we have to take into account? Point to them on the map.”*

**“Environmental”**

*“What major water sources should we avoid contaminating? Show me on the map.”*

**“Water Sources”**

*“Is there electricity there? Show it to me.”*

**“Electricity There”**

<i>“Where does your electricity come from? Show me on a map or drawing.”</i>	<b>“Electricity Source”</b>
<i>“What type of electricity is used there? Write it here.”</i>	<b>“Type of Electricity”</b>
<i>“What type of wiring do you use?”</i>	<b>“Type of Wiring”</b>
<i>“What type of conduit do you have?”</i>	<b>“Type of Conduit”</b>
<i>“Is there specialized electrical safety gear? Please show it to me.”</i>	<b>“Electrical Gear”</b>
<i>“Is there telephone capability? Please show it to me.”</i>	<b>“Phone Capability”</b>
<i>“Can we communicate by phone? Please write down the number and the person to ask for.”</i>	<b>“Can We Phone”</b>
<i>“Can you use cell phones here?”</i>	<b>“Cell Phones Here”</b>
<i>“Is there internet capability? Show it to me.”</i>	<b>“Internet Here”</b>
<i>“How deep is the port? Show me a drawing or write the depth in meters here.”</i>	<b>“Depth of Port”</b>
<i>“How big of ships can tie up to the pier? Please write the size here or show me a picture.”</i>	<b>“Size of Ships”</b>
<i>“How many ships can pull up to the pier? Please write the number here.”</i>	<b>“How Many Ships”</b>
<i>“What type of loading equipment is there?”</i>	<b>“Loading Equipment”</b>
<i>“Is the runway paved?”</i>	<b>“Runway Paved”</b>
<i>“Is the runway flat?”</i>	<b>“Runway Flat”</b>
<i>“Do big planes land at the Airport?”</i>	<b>“Big Planes Land”</b>

*“Do jets land at the Airport?”*

**“Jets Land There”**

*“How long is the runway? Write down the length in meters.”*

**“Length of Runway”**

*“What type of loading equipment is there? Point to it.”*

**“Loading Equipment”**

## **TRANSPORTATION**

### **“TRANSPORTATION”**

Switches to the TRANSPORTATION Situatic

### **TRANSLATED PHRASES**

### **VOICE COMMANDS**

*“Are the roads paved?”*

**“Roads Paved”**

*“Are the roads usable?”*

**“Roads Usable”**

*“How wide are the roads there? Write the width in meters.”*

**“How Wide Are Road:**

*“Do heavy trucks use the roads?”*

**“Heavy Trucks”**

*“Where do we refuel? Show me the location on the map.”*

**“Refueling Location”**

*“Where do we take this vehicle to get repaired? Take me there or show me the location on the map.”*

**“Vehicle Repair”**

*“Are there safe routes? If yes, show them to me on the map.”*

**“Safe Routes”**

*“Are there dangerous routes? If yes, show them to me on the map.”*

**“Dangerous Routes”**

*“Do you have a map showing roads? Highways? Bridges? Please give it to me.”*

**“Map of Roads”**

*“What is the load capacity for the bridge? Write it down in kilograms.”*

**“Bridge Capacity”**

*“Are there damaged bridges? If yes, show them to me on the map.”*

**“Damaged Bridges”**

“*Are the bridges still fully functional? If yes, show them to me on the map.*”

**“Good Bridges”**

“*Are there roads that need to be repaired? If yes, show them to me on the map.*”

**“Damaged Roads”**

“*How damaged are the roads? Point to vehicles that could use the roads.*”

**“How Bad Are Roads”**

“*Where can we get parts for our equipment? Oil, gasoline, lube, tools. Take me there or show me on the map.*”

**“Parts for Equipment”**

## **SURVEYS**

**“SURVEYS”**

Switches to the SURVEYS Situation set from another set.

**TRANSLATED PHRASES**

**VOICE COMMANDS**

“*Is the ground flat there?*”

**“Flat Ground”**

“*Are there many hills there?*”

**“Many Hills There”**

“*Are there mountains?*”

**“Are There Mountains”**

“*What kind of vegetation grows there?*”

**“Type of Vegetation”**

“*Is there a river nearby? If yes, show it to me on the map.*”

**“River Nearby”**

“*Is it sandy there?*”

**“Is it Sandy”**

“*Is it rocky there?*”

**“Is it Rocky”**

“*Do you have surveyors? Write their names here.*”

**“Any Surveyors”**

“*Do you have surveying equipment? Point to pictures of what you have.*”

**“Surveying Equipment”**

<i>“Where are the closest survey benchmarks? Point to the location on the map.”</i>	<b>“Survey Benchmarks”</b>
<i>“What’s the elevation of this point? Write it here.”</i>	<b>“Elevation Here”</b>
<i>“Do you know latitude and longitude measurements for this point? Write it here.”</i>	<b>“Measurements Here”</b>
<i>“Are these GPS measurements?”</i>	<b>“GPS Measurements”</b>
<i>“Do you have drafting equipment -- Pens, pencils, ruler or straightedge? Please bring them to me.”</i>	<b>“Drafting Tools”</b>
<i>“Do you have drafting computers? What programs do you use? Write the names.”</i>	<b>“Drafting Computer”</b>
<i>“Do you have laptops available for our use? If yes, please bring them to me.”</i>	<b>“Laptops for Us”</b>
<i>“Do you have earthquakes/hurricanes/typhoons?”</i>	<b>“Earthquakes Here”</b>
<i>“When was the last earthquake/hurricane/typhoon? Write the date here.”</i>	<b>“Last Earthquake”</b>
<i>“Where does most damage occur? Show it to me on the map.”</i>	<b>“The Most Damage”</b>
<i>“Is there anything underground here? If yes, draw or point to a picture”</i>	<b>“Anything Undergrou</b>

**WEATHER**

**“Weather”** Switches to the WEATHER Situation set from another set.

**TRANSLATED PHRASES**

**VOICE COMMANDS**

<i>“Is the ground dry?”</i>	<b>“Dry Ground”</b>
<i>“Is the ground wet?”</i>	<b>“Wet Ground”</b>

*“Does it rain often?”*

**“Rain Often”**

*“How much does it rain? Write the annual rainfall in centimeters here.”*

**“How Much Rain”**

*“Do you have a rainy season? Write the dates here.”*

**“Rainy Season”**

*“Is there much wind?”*

**“Is There Wind”**

*“How hot does it get? Write the temperature in centigrade here.”*

**“How Hot Does It Get”**

*“How cold does it get? Write the temperature in centigrade here.”*

**“How Cold Does It Ge”**

*“Does it freeze there?”*

**“Does it Freeze”**

*“How deep does the snow get? Write the depth in meters here.”*

**“Depth of Snow”**

## **EXISTING BUILDING**

**“Existing Building”**

Switches to the EXISTING BUILDING Situation set

### **TRANSLATED PHRASES**

### **VOICE COMMANDS**

*“Where is the water shut off valve? Take me to it or show it on a drawing.”*

**“Water Shut Off”**

*“Where is the electric panel? Take me to it or show it on a drawing.”*

**“Electric Panel”**

*“Where is the gas shut off valve? Take me to it or show it on a drawing.”*

**“Gas Shut Off”**

*“Where is the heating unit? Take me to it or show it on a drawing.”*

**“Heating Unit”**

*“Where is the air conditioning unit? Take me to it or show it on a drawing.”*

**“Air Conditioning”**

*“What is the problem? Take me to it or show it on a drawing.”*

**“What’s The Problem”**

**DRAFT** TRANSLATED PHRASES Played by Translator are in *“Italics”*

Voice Co

*“What do you need fixed? Take me to it or show it on a drawing.”*

**“What Needs Fixed”**

*“Do you have plans? Take me to it or show it on a drawing.”*

**“Do You Have Plans”**

*“What is the drawing scale? Please write it here.”*

**“The Drawing Scale”**

*“Where do you want me to dig? Take me to it or show it on a drawing.”*

**“Location to Dig”**

*“How deep? Write the depth in meters here.”*

**“Show How Deep”**

*“How long? Write the length in meters here.”*

**“Show How Long”**

*“How wide? Write the width in meters here.”*

**“Show How Wide”**

## **SEABEE TERMS**

**“SeaBee Terms”**

Switches to the SEABEE TERMS Situation set from :

### **TRANSLATED PHRASES**

### **VOICE COMMANDS**

*“Pre-engineered Building (PEB)”*

**“P-E-B”**

*“Strong back tent”*

**“Strong Back Tent”**

*“General Purpose(GEE-PEE) medium tent”*

**“GP Tent”**

*“3-Hole Dugout”*

**“Three-Hole Dugout”**

*“Chemical Biological Radiological (CBR)”*

**“Chem-Bio”**

*“A company”*

**“Alpha Company”**

*“B company”*

**“Bravo Company”**

*“C company”*

**“Charlie Company”**

*“D company”*

**“Delta Company”**

*“H company”*

**“Hotel Company”**

### **MATERIAL TERMS**

General phrases to be combined with a material, equipment, labor term and usually a measure.

**“Material Terms”**

Switches to the MATERIAL TERMS Situation set fr

#### **TRANSLATED PHRASES**

#### **VOICE COMMANDS**

*“Do you have any (-----)?”*

**“Do You Have Any”**

*“Where can I get some (-----)?”*

**“Where Can I Get”**

*“This item needs to be repaired.”*

**“This Needs Repair”**

*“This item needs to be replaced”*

**“This Needs Replacem**

*“Is the work area accessible?”*

**“Work Area Accessibl**

*“Is the work area secure?”*

**“Work Area Secure”**

*“I need these types of workers.”*

**“These Workers”**

*“When will the material be here? Point to the date or time.”*

**“Material Arrival”**

*“Can you supply this amount?”*

**“Can You Supply This**

*“Do you have anything larger?”*

**“Anything Larger”**

*“Do you have anything smaller?”*

**“Anything Smaller”**

*“This equipment needs servicing.”*

**“This Needs Servicing”**

*“Can you repair this item?”*

**“Can You Repair?”**

*“Where are your rock quarries? Show me on a map”*

**“Rock Quarries”**

*“Where are your concrete plants? Show me on a map.”*

**“Concrete Plants”**

*“Where are your asphalt plants? Show me on a map.”*

**“Asphalt Plants”**

*“We need someone who specializes in using this of equipment.”*

**“Specialist for This”**

### **Equipment Types**

*“We need this type of equipment.”*

**“Need Equipment”**

### **NOTE: INDENTIFICATION OF EQUIPMENT NEEDED CAN ALSO BE DONE WITH ATTACHED PICTURES**

*“Scrapers”*

**“Scrapers”**

*“Dozers”*

**“Dozers”**

*“Graders”*

**“Graders”**

*“Backhoes”*

**“Backhoes”**

*“Excavators”*

**“Excavators”**

*“Cranes”*

**“Cranes”**

*“Drill Rigs”*

**“Drill Rigs”**

*“Water Trucks”*

**“Water Trucks”**

“*Water Buffaloes*”

“**Water Buffaloes**”

“*Buses*”

“**Passenger Buses**”

“*Stake Trucks*”

“**Stake Trucks**”

“*Dump Trucks*”

“**Dump Trucks**”

“*Pickup Truck*”

“**Pickup Truck**”

“*Automobiles*”

“**Automobiles**”

“*Compactors*”

“**Compactors**”

“*Rollers*”

“**Rollers**”

“*Light Plants*”

“**Light Plants**”

“*Generators*”

“**Generators**”

“*Heaters*”

“**Heaters**”

“*Surveying Gear: Transits, Levels, GPS*”

“**Surveying Gear**”

### **Worker Types**

“*We need more persons who do this work*”

“**Need These Workers**”

**NOTE: INDENTIFICATION OF WORKERS NEEDED CAN ALSO BE DONE WITH ATTACHED PICTURES**

“*Builder / Carpenter*”

“**Carpenter**”

“*Steelworker*”

“**Steelworker**”

“ <i>Plumber / Utilities man / Pipefitter</i> ”	“ <b>Plumber</b> ”
“ <i>Electrician</i> ”	“ <b>Electrician</b> ”
“ <i>Mechanic</i> ”	“ <b>Mechanic</b> ”
“ <i>Operator / Driver</i> ”	“ <b>Operator/Driver</b> ”
“ <i>Engineer</i> ”	“ <b>Engineer</b> ”
“ <i>Administrative/Secretary</i> ”	“ <b>Administrative</b> ”
“ <i>Planner</i> ”	“ <b>Planner</b> ”
“ <i>Estimator</i> ”	“ <b>Estimator</b> ”
“ <i>Surveyor</i> ”	“ <b>Surveyor</b> ”
“ <i>Scheduler</i> ”	“ <b>Scheduler</b> ”
“ <i>Manager</i> ”	“ <b>Manager</b> ”

**BUILDING TERMS**

“**Building Terms**”

Switches to the **BUILDING TERMS** Situation set 1

**TRANSLATED PHRASES**

**VOICE COMMANDS**

“Footing”	“Footing”
“Slab on grade”	“Slab on grade”
“Window Sill”	“Window Sill”

“Sill Piece”	“Sill Piece”
“Sill Part”	“Sill Part”
“Plate”	“Plate”
“Header/lintel”	“Header/Lintel”
“Beam”	“Beam Section”
“Rafter”	“Rafter”
“Truss”	“Truss Piece”
“Joist”	“Joist”
“Post”	“Post”
“Girder”	“Girder”
“Pier”	“Pier”
“Anchor”	“Anchor”
“Strap”	“Strap”
“Window”	“Window”
“Door”	“Door”
“Cabinet”	“Cabinet”
“Hood”	“Hood”
“Plenum”	“Plenum”

“Register”

“Register”

“Light fixture”

“Light Fixture”

“Motor”

“Motor”

**OUTSIDE TERMS**

“Outside Terms”

Switches to the **OUTSIDE TERMS** Situation set fr

**TRANSLATED PHRASES**

**VOICE COMMANDS**

“Bridge”

“Bridge”

“River”

“River”

“Ocean”

“Ocean”

“Lake”

“Lake”

“Hill”

“Hill”

“Mountain”

“Mountain”

“Tree”

“Tree”

“Brush”

“Brush”

“Tower”

“Tower”

“Tank”

“Tank”

“Building”

“Building”

**DRAFT** TRANSLATED PHRASES Played by Translator are in “*Italics*”

Voice Co

“Road”

“Road”

“Trail”

“Trail”

“Valley”

“Valley”

“Ridge”

“Ridge”

**INCLUDED IN PICTURE FORM – NO AUDIO PHRASES RECORDED FOR THESE:**

**Materials:**

Asphalt

Type

Tar

Oil

Concrete

Types

Aggregate

Fine

Coarse

Admixtures

Gravel

Dirt

Sand

Wood

Studs

Timbers

Sheathing

Plywood

OSB

Standard size?

Standard thickness?

Structural

Glulams

Composites

Trusses

Poles

Wharf Piers / Piles

Creosote

Preservative Treatment

Metals

Pipe

Beams

Plates

Brackets

Banding

Sheet

Galvanizing

Stainless

Rebar (Reinforcing Steel)

Welded Wire Fabric

Airfield Matting

Pipes

Plastic/PVC

Concrete

CMP

Aluminum

Copper

Ductile Iron

Valves

Joints  
90 degree bend  
45 degree bend  
Flexible bend  
Pipe supports  
Metal tape  
Pipe Sealant

Drywall  
Sheets  
Compound  
Plaster  
Stucco  
Tape  
Nails  
Texture

Mechanical  
Vent  
Heater  
Air Conditioner  
Ductwork

Paint  
Latex  
Enamel  
Thinner

Insulation  
Wall  
Roof  
Pipe

Electrical  
Wiring Gauge?

Switches  
Transformers  
Conduit  
Power type (AC/DC)  
Voltage  
Breakers  
Panels  
Power poles  
Hertz/Phase/Cycle  
Receptacle  
Light Switch  
Thermostat  
Telephone Jack  
Light Bulb

Masonry  
Bricks  
CMU Blocks  
Mortar

Bridge Materials  
Bailey bridge  
Ropes  
MGB

Misc  
Nails  
Screws  
Bolts  
Nuts  
RR Spikes  
Curing Compound  
Burlap  
Straw  
Plastic Sheets

Tarps  
Solder / Flux  
Roof Tar  
Building Paper  
Roofing Paper  
Glass  
Windows  
Mirror  
\_ turn  
90 turn  
Santee  
Y fitting  
Combination fitting  
Short sweep  
Long sweep  
Closet bend  
Fixture ring

Fixtures

Toilet  
Urinal  
Faucet  
Bathtub  
Sink  
Shower  
Drain  
P trap

**Tools**

Hammer  
Nail Gun  
Saw  
Pliers  
Wrench  
Vice

Grinder  
Air Compressor  
Pneumatic Impact Wrench  
Sockets  
Shovel  
Pick  
Screwdriver +  
Screwdriver –  
Screwgun  
Staplegun  
Drill  
Drill bits  
Clamp  
Pry bar  
Wire cutter  
Conduit cutter  
Conduit bender  
Ohmmeter  
Circuit Tester  
Trowel  
Spatula  
Pencil  
Pen  
String  
Framing square  
Knife  
Broom  
Paint brush  
Paint roller  
Level  
Plumb bob  
Power cord  
Scaffolding  
Torches  
Acetylene Tank

Oxygen Tank  
Electric Welder  
Welding Rods/Flux  
Generators  
Ladders

**Safety**

Hard Hats  
Safety Goggles  
Gloves (Leather, plastic)  
Steel Toe Boots  
Harnesses (for fall protection)

**Measurements**

Centimeter  
Millimeter  
Meter  
Square mm, cm, m  
Cubic mm, cm, m  
Liters  
inch  
foot  
yard  
Small  
Medium  
Large  
Short  
Long