

[1]

JAN 31 TRENKLER LEAHY AT 7 WHITELAWN AVE

1) LEAHY SAYS THAT I TALKED ABOUT **BLASTING CAPS**  
AND **SHUNTS**

\* BEING IN THE TWO WAY RADIO BUSINESS AND SELLING TO CONSTRUCTION COMPANIES, I WOULD BE ASKED WHAT EFFECT A HAND HELD TWO WAY RADIO WOULD HAVE ON **BLASTING CAPS** THAT WERE BEING USED ON CONSTRUCTION SITES. FOR THIS I WOULD ASK THE CLIENT CERTAIN DETAILS CONCERNING **BLASTING**, AND THEN DO THE RESEARCH. (SUCH AS PERMISSABLE POWER OUTPUT FROM A RADIO, BASED ON OSHA RULES, AROUND CERTIAN HAZARDOUS LOCATIONS INCLUDING **BLASTING AREAS**.)

\* ALL MOTOROLA RADIO TRANSMISSION DEVICES COME WITH A STANDARD WARNING FOR USE AROUND UNSHIELDED **BLASTING CAPS** AND OTHER HAZARDOUS LOCATIONS.

\* PERINI CORPORATION WAS ONE - I WORKED AT THE THIRD HARBOR TUNNEL PROJECT, THE GULF RADIO PROJECT.

\* J.F. WHITE CONSTRUCTION WAS ONE  
THEY DO **BLASTING** ON HIGHWAY PROJECTS.

\* AMERICAN OVERSEAS AND SHIPPING (GENERAL DYNAMICS) WAS ONE  
THEY HAD QUESTIONS ABOUT INTRINSICALLY SAFE RADIOS FOR HAZARDOUS LOCATIONS (YOU HAVE A LETTER FROM AMSEA TO ME AT ATEL OR FROM ATEL TO AMSEA)

IN PAGE 30 LINE 16 OF DAY 15 GERTNER ASKS LEAHY IF ANYONE WITH EXPERTISE IN MICROWAVES WOULD BE SOMEONE WHO WOULD KNOW THE RELATIONSHIP BETWEEN WHAT HE DOES AND **EXPLOSIVES** IN THE CONSTRUCTION AREA. LEAHY ANSWERS "WELL ACTUALLY, THE **EXPLOSIVES** ARE USED TO REMOVE STONES AND SO FORTH, AND THEN THEY WOULD PUT THE TOWER IN, AND THEN THE MICROWAVE PORTION WOULD GO IN LAST. SO THE MICROWAVE EQUIPMENT WOULD GO IN LAST. SO THE **BLASTING** SHOULD HAVE BEEN COMPLETED BY THE TIME THE MICROWAVE EQUIPMENT IS INSTALLED."

\*\* WHAT LEAHY OVERLOOKS IS THE FACT THAT PART OF MY BUSINESS WAS TO INSTALL TOWERS AND THEN INSTALL THE MICROWAVE PORTION. THE POINT BEING, IF I WERE TO USE AN EXCAVATION COMPANY TO DIG A HOLE FOR A TOWER, ONE OF THE FIRST QUESTIONS I WOULD ASK WOULD BE, IF, DURING THE COURSE OF EXCAVATION, WE WERE TO HIT EITHER BEDROCK OR SOME KIND OF ROCK TOO LARGE TO REMOVE WITH AN EXCAVATOR, WOULD THEY, AS A LAST RESORT, BE ABLE TO **BLAST** OR WOULD THEY KNOW A COMPANY THAT COULD **BLAST**. IN MY STANDARD CONTRACTS, WHEN BUILDING A TOWER FROM FOUNDATION UP, I ALWAYS PUT IN A PARAGRAPH THAT ALLOWS FOR EXTRA PAYMENTS IF, WHILE "DIGGING", AN UNKNOWN MATERIAL IS ENCOUNTERED AND OTHER MEASURES HAVE TO BE TAKEN TO CONTINUE THE "DIG". THIS COULD INVOLVE EITHER A LARGER PIECE OF EQUIPMENT, ANOTHER DIG SITE, DRILLING, OR, AS A LAST RESORT, **BLASTING**.

MATERIAL IS ENCOUNTERED AND OTHER MEASURES HAVE TO BE TAKEN TO CONTINUE THE "DIG". THIS COULD INVOLVE EITHER A LARGER PIECE OF EQUIPMENT, ANOTHER DIG SITE, DRILLING, OR, AS A LAST RESORT, **BLASTING**.

[2]

PAGE 21 LINE 25 OF DAY 15 KELLY ASKS LEAHY SPECIFICALLY WHAT TRENKLER SAID THAT SURPRISED LEAHY ABOUT TRENKLER'S KNOWLEDGE OF EXPLOSIVES. LEAHY MENTIONS THAT AL MENTIONS **SHUNT, LEG WIRES** AND THAT **DYNAMITE** CAN EXPLODE OTHER **DYNAMITE** THROUGH HEAT, WHICH MEANS A DETONATION, AND THAT IT WAS HIS OPINION THAT A LAY PERSON WOULD'T HAVE THAT KNOWLEDGE.

THEN LEAHY GOES ON TO SAY THAT HE DOES NOT KNOW ABOUT MICROWAVE TECHNOLOGY THEN SAYS IT IS VERY DANGEROUS WHEN YOU ARE DEALING WITH EXPLOSIVES IF THER'S ANY MICROWAVE OR GROUND RADIATION, SO YOU AVOID IT.

PAGE 16 LINE 10 DAY 15 GERTNER ASKS LEAHY HOW TRENKLER CAME TO KNOW SUCH THINGS (**BLASTING CAPS, SHUNT, ELECTRICAL WIRES** AS AN ANTENNA).

PAGE 16 LINE 13 LEAHY SAID THAT "WE" HAD A FAIRLY LENGTHLY CONVERSATION ABOUT EXPLOSIVES, AND I WAS SURPRISED HE KNEW WHAT A **SHUNT** WAS. I WAS SURPRISED HE KNEW ABOUT **LEG WIRES** AND **BLASTING CAPS**. I WAS SURPRISEED THAT HE KNEW [THAT] **DYNAMITE** OR A HIGH EXPLOSIVE PLACED UNDER **DYNAMITE** WOULD **SYMATHEETICALLY DETONATE**.

LEAHY SAYS THAT IT DEPENDS ON HOW CLOSE **DYNAMITE** IS PLACED NEXT TO OTHER **DYNAMITE** IT IT WILL CAUSE IT TO EXPLODE

PAGE 17 LINE 9 GERTNER ASKS LEAHY "AND THE COMMENT THAT TWO ELECTRICAL WIRES CAN ACT AS AN ANTENNA IS REALLY NOTHING MORE THAN THE SAME THING AS THE SIGNS WHEN YOU PASS A **BLASTING AREA, DON'T TURN ON YOUR RADIO; IS THAT RIGHT?**" TO WHICH LEAHY ANSWERS HE DOESN'T THINK SO.

\*\*\* AT THIS POINT LEAHY SHOULD BE ASKED WHAT THEN ARE THE SIGNS POSTED FOR, ACTUALLY THE SIGNS READ "BLASTING AREA, TURN OFF ALL TWO WAY RADIOS" HE WILL HAVE TO SAY BECAUSE OF THE POSSIBILITY OF STRAY RF OR RADIO FREQUENCY SIGNALS POSSIBLY **COUPLING** WITH THE LONG LEADS BETWEEN THE **DYNAMITE** AND THE PLUNGER OR THE SWITCH THAT POWERS THE **BLASTING CAPS**. AGAIN, IN THE TWO WAY RADIO BUSINESS AND SELLING TO CONSRTRUCTION COMPANIES, A RESPONSIBLE PERSON WOULD HAVE TO KNOW THE EFFECTS RF TRANSMISSIONS HAVE ON **BLASTING SITES**.

\*\*\* WE HAVE GONE OVER THE "SHUNT" ASPECT BUT HERE IS ANOTHER EXAMPLE ANYWAY.

\* IN ELECTRONICS THERE IS A DEVICE CALLED A CAPACITOR, CERTAIN ONES THAT WILL PICK UP A CONSIDERABLE AMOUNT OF STRAY ELECTRICAL ENERGY. BECAUSE OF THIS, THE CAPACITOR WOULD BE SHIPPED WITH A **SHUNT** ACROSS IT'S TERMINALS TO ABSORB ANY EXCESS ENERGY.

CERTAIN ONES THAT WILL PICK UP A CONSIDERABLE AMOUNT OF STRAY ELECTRICAL ENERGY. BECAUSE OF THIS, THE CAPACITOR WOULD BE SHIPPED WITH A SHUNT ACROSS IT'S TERMINALS TO ABSORB ANY EXCESS ENERGY.

\* ANOTHER EXAMPLE WOULD BE IN THE CONSTRUCTION OF A VOLT-OHM METER AND OR A AMMETER (AMP METER), A SHUNT RESISTOR WOULD BE PUT IN PARALLEL WITH A METER TO "SHUNT" THE EXCESS VOLTAGE OR CURRENT AWAY FROM THE METER, OTHERWISE THE METER WOULD BE DAMAGED BY THE EXCESS VOLTAGE OR CURRENT.

\* THIS IS THE SAME EFFECT THAT A SHUNT ON A BLASTING CAP WOULD BE USED FOR, TO ABSORB ANY EXCESS CURRENT SO THAT THE

[3]

BLASTING CAP WOULD NOT GET DAMAGED (OR DETONATE)

\* AS FOR "LEG WIRES", I NEVER MENTIONED THE WORDS ON THAT FAMOUS JAN 31 92 DAY. LEAHY BROUGHT UP THE QUESTION BY ASKING ME IF I THOUGHT THAT LONG WIRES COULD ACT AS AN ANTENNA TO WHICH I ANSWERED YES AND I EVEN DEFINED THIS EFFECT AS COUPLING--A COMMON TERM USED IN THE COMMUNICATION ENGINEERING FIELD.

\*\*\* DYNAMITE THROUGH HEAT OR DETONATION CAUSING OTHER DYNAMITE TO EXPLODE IS NOTHING MORE THAN PHYSICS 101 OR THE SAME AS THROWING A MATCH IN A BAG OF FIREWORKS, ALMOST ALL OF THE FIREWORKS WILL EXPLODE BECAUSE OF THE HEAT GENERATED BY THE SURROUNDING FIREWORKS WILL CAUSE THE REST OF THEM TO IGNITE.

\*\*\* SYMPATHETIC DETONATION WAS NEVER MENTIONED ON JAN 31 92. LEAHY SIMPLY ASKED WHAT I THOUGHT WOULD HAPPEN IF DYNAMITE WAS SET OFF NEXT TO OTHER DYNAMITE TO WHICH I ANSWERED THAT PHYSICS WAS PHYSICS, I WOULD ASSUME IT WOULD CAUSE THE OTHER DYNAMITE TO EXPLODE. AGAIN COMPARE TO FOURTH OF JULY FIREWORKS.

\*\*\* LEAHY NAILS IT RIGHT ON THE HEAD WHEN HE COMMENTS ABOUT "GROUND WAVES" CAUSING BLASTING CAPS OR THE WIRES LEADING TO THEM TO ACT AS AN ANTENNA TO CAUSE THEM TO EXPLODE. THIS IS ONE OF THE FIRST CONCERNS THAT A BLASTING COMPANY OR A CONSTRUCTION COMPANY USING DYNAMITTE OR STORING LARGE AMOUNTS OF FUEL WOULD HAVE WHEN PURCHASING TWO WAY RADIOS AND ALSO, AS SEEN IN THE RED MOTOROLA P200 HANDBOOK, IS ADDRESSED BY MOTOROLA I.E., SOMEONE IN THE TWO WAY RADIO BUSINESS NOT ONLY KNOWS OF THIS CONCERN, BUT ALSO KNOWS OF THE EFFECT R.F. TRANSMISSIONS HAS ON A LENGTH OF WIRE. THIS EFFECT, IN RADIO LANGUAGE, CALLED COUPLING, AND IS A COMMON PROBLEM WHEN ENGINEERING TWO WAY RADIO SYSTEMS.

ALSO VERY INTERESTING IS THAT A GROUND WAVE IS THE DEFINITION OF AN AMPLITUDE MODULATION (AM) SIGNAL AND THESE ARE PART OF THE BASIC TEACHINGS IN ELECTROMAGNETIC THEORY, SOMETHING THAT ANYONE IN THE COMMUNICATIONS INDUSTRY WOULD KNOW ABOUT.

ALSO IN THE DESIGNING OF A TRANSMISSION TOWER THERE IS

SOMETHING THAT ANYONE IN THE COMMUNICATIONS INDUSTRY WOULD KNOW ABOUT.

ALSO IN THE DESIGNING OF A TRANSMISSION TOWER THERE IS CONSIDERABLE DESIGN CONSIDERATIONS GIVE TO THE GROUNDING OF THE TOWER TO PROVIDE THE MOST EFFECTIVE "GROUND WAVE".

ALSO, IN THE COMMUNICATIONS FIELD, WHAT THE HELL IS AN ANTENNA ANYWAY BUT A LONG PIECE OF WIRE, ANY WIRE WILL ACT AS AN ANTENNA IF IT IS NOT GROUNDED BY A SHIELD OR A SHUNT OF SOME KIND. THIS CAN ALSO BE APPLIED TO THE AUTOMOTIVE CAR STEREO FIELD IN THAT CONSIDERATION HAS TO BE GIVEN IN PROPERLY ISOLATING WIRES BETWEEN A RECEIVER, TAPE DECK, CD PLAYER, AMPLIFIER AND SPEAKERS IN ORDER NOT TO PICK UP STRAY RF AND ALTERNATOR SIGNALS THAT WILL "COUPLE" WITH THE LENGTH OF WIRES USED TO INTERCONNECT THESE DIFFERENT COMPONENTS,

[4]

THESE PROBLEMS REVEAL THEMSELVES AS STATIC AND OR WHINING SOUNDS THAT CAN BE HEARD ON IMPROPERLY GROUNDED OR SHIELDED SYSTEMS.

ALSO AS DISCUSSED, BEING IN THE CONSTRUCTION BUSINESS, ONE MUST ADHERE TO THE OSHA RULES AND REGULATIONS REGARDING COMMON PRACTICES AROUND HEAVY EQUIPMENT AND CONSTRUCTION SITES. SINCE I DEAL WITH A WIDE SPECTRUM OF CLIENTS I HAVE TO KNOW AN EQUALLY GREAT AMOUNT OF POSSIBLE SITUATIONS THAT COULD BE A DANGER TO EITHER MY EMPLOYEES OR THAT OF OTHERS THAT MAY BE EFFECTED BY WHATEVER IT IS THAT I MAY BE DOING AT A PARTICULAR SITE.

AS NOTED ABOVE I DEAL OR HAVE DEALT WITH CONSTRUCTION SITES SUCH AS THE THIRD HARBOR TUNNEL PROJECT WHER THE POSSIBILITY OF THE USE OF EXPLOSIVES IS A CONSIDERATIOIN WHEN USING TWO WAY RADIOS.

ALSO FOR THE MWRA ON DEER ISLAND, THOUGHT HAD TO BE GIVEN TO THE USE OF RADIOS AROUND POSSIBLE DEMOLITION SITES.

ALSO AS MENTIONED MOST OF THE EXCAVATION COMPANIES THAT I USE ARE FAMILIAR WITH THE USE OF EXPLOSIVES AND WOULD BASICALLY GO OVER THE DETAILS OF WHAT WOULD BE ENTAILED IN THE USE OF DYNAMITE (MOST OF THESE GUYS LIKE TO BRAG ABOUT THE DIFFERENT JOBS THEY HAVE DONE)