

BRYAN LAMB, C-SPAN , [REDACTED]

o-must carry

DEAR MR LAMB.

ON SUNDAY LAST YOU WERE TESTIFYING ABOUT "DIGITAL MUST CARRY". IF YOU HAVE AN OCCASION TO AGAIN ARGUE YOUR CASE, THE FOLLOWING TRUE STORY TO EMPHASIZE YOUR PLEA FOR A DECISION TO FIX THE REQUIREMENTS,

BACK BEFORE THERE WAS COMMERCIAL TV THERE WAS A WORKING GROUP TO FIX THE SPECIFICATIONS FOR THE TV TRANSMITTERS AND RECEIVERS. ONE OF THE THINGS FIXED WAS THE NUMBER OF LINES THAT DEFINED THE VERTICAL PICTURE DIMENSION (THIS IN TURN DEFINED THE TV BROADCAST SIGNAL BANDWIDTH AND THE RESOLUTION OF THE PICTURE DISPLAYED). IT WAS DECIDED THAT 525 LINES WAS JUST ABOUT RIGHT. OF COURSE, THE ORIGINAL SPECIFICATION WAS FOR BLACK AND WHITE. IT IS INTERESTING TO NOTE THE BRITISH OPTED FOR 625 LINES AND THE FRENCH FOR 900 LINES. WHY WAS 525 LINES CHOSEN FOR THE U.S.? BECAUSE THAT AUGUST WORKING GROUP CONVINCED THEMSELVES AND EACH OTHER THAT THE LARGEST DIAMETER CATHODE RAY TUBE WHICH COULD BE MASS PRODUCED ECONOMICALLY WAS 10 INCHES IN DIAMETER. THIS DECISION WAS MADE PRIOR TO THE APPEARANCE OF RECTANGULAR PICTURE TUBES. THE FACT THAT PICTURE TUBES HAVING DIAGONALS OF 25 INCHES APPEARED SHORTLY AFTER THE TV SIGNAL SPECIFICATIONS WERE "SET IN CONCRETE", A NEW PROBLEM REARED ITS UGLY HEAD. SINCE THE TV SIGNAL HAD ONLY 525 LINES, THE RASTER ON THE LARGER TV SCREENS HAD A BLACK LINE (NO ELECTRON BEAM IMPINGED ON THE SCREEN PHOSPHOR) BETWEEN EACH PAIR OF LINES PROVIDING THE PICTURE. AFTER SOME HAND WRING, WAILING, AND MASAGING OF TEETH IT WAS DECIDED THAT ROTATING THE ELECTRON BEAM IN A TINY CIRCLE AS IT SWEEP ACROSS THE SCREEN WHICH CREATED A BROAD FUZZY LINE WHICH LEFT NO BLACK SPACE BETWEEN ADJACENT SWEEPS OF THE ROTATING ELECTRON BEAM. THE ACTUAL IMPLEMENTATION OF THE SWEEP IS ACTUALLY MORE COMPLEX THAN THIS BECAUSE OF OTHER REQUIREMENTS TO ACHIEVE AN ACCEPTABLE PICTURE. IT IS EXTREMELY

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FORTUNATE THE HUMAN EYE IS SUCH A TERRIFIC SHOOTER OF INFORMATION IN THE SENSE THAT IT "SEES" MOTION AS THE RESULT OF VIEWING A COLLECTION OF STILL PICTURES THAT ARE FLASHED BY THE EYE IN SEQUENCE AT AN ADEQUATE RATE OF SPEED. THE EXISTING IMPLEMENTATION OF TV AND MOVIES WOULD NOT BE ACCEPTABLE FOR VIEWING WERE IT NOT FOR THIS PROPERTY OF THE EYE. ALL OF THE STUFF DESCRIBED HERE WAS ACCOMPLISHED ELECTRONICALLY WHERE THE ONLY MOVING PARTS WERE ELECTRONS WHICH MOVE APPROXIMATELY AT THE SPEED OF LIGHT. ANOTHER ASTOUNDING FACT ABOUT TV AS WE KNOW IT, IS THAT EVERY TV SET CONNECTED TO THE SAME ELECTRIC UTILITY HAS ITS ELECTRON BEAM IMPINGING ON ITS PHOSPER AT EXACTLY THE SAME POINT (IN PROPORTION TO SCREEN SIZE) AT THE SAME INSTANT IN TIME. IMAGINE, HUNDREDS OF THOUSANDS OF ELECTRON BEAMS MOVING IN PERFECT SYNCHRONISM OVER THE UTILITY SERVICE AREA. THIS IS THE REAL WONDER OF TELEVISION!

THEN WHEN EVERYONE BECOMES ACCLIMATED TO BLACK AND WHITE TV, THE HUE AND CRY IS RAISED FOR COLOR TV. THE EXISTING B&W TV HAS BEEN DEVISED TO USE ALL THE FREQUENCY BANDWIDTH THAT HAS BEEN ALLOCATED FOR EACH CHANNEL. TO REALIZE COLOR THE TV, RECEIVERS AND TRANSMITTERS MUST BE CAPABLE OF INCREASING THE AMOUNT OF INFORMATION CONTAINED IN THE CHANNEL BANDWIDTH BY A FACTOR THREE. UNFORTUNATELY, MOTHER NATURE HAS SOME VERY STRICT RULES ABOUT THE RELATIONSHIP ABOUT HOW MUCH BAND WIDTH IS REQUIRED TO TRANSMIT A SPECIFIC LUMP OF INFORMATION WITHOUT MOLESTING IT IN TRANSIT. I BELIEVE THAT GETTING COLOR TV SIGNAL INTO THE SAME BANDWIDTH AS THE B&W TV BANDWIDTH SIGNAL MAY WELL BE THE OUTSTANDING ENGINEER-

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ING ACHIEVMENT OF ITS DECADE. WELL, THEY DIDN'T ACTUALLY TRIPLE THE AMOUNT OF INFORMATION PRESENT IN THE BROADCAST SIGNAL, THEY DECEIVED THE SYSTEM INTO THINKING THAT THERE WAS THREE TIMES THE INFORMATION. NOT ONLY THAT, BUT THEY HAD TO GO INTO FEDERAL COURT FOR AN INJUNCTION TO PREVENT BILL PALLEY (OF CBS FAME) FROM ENCUMBERING US WITH AN ARCAIC TECHNICALLY INFERIOR AND AWKWARD MECHANICAL (AS OPPOSED TO ELECTRONIC) SYSTEM, BUT THAT'S ANOTHER STORY. PALLEY'S SCHEME WOULD HAVE REQUIRED A TV CABINET WITH FRONTAL DIMENSIONS IN EXCESS OF ELEVEN BY ELEVEN FEET TO REALIZE A SIXTY INCH VIEWING SURFACE.

THE MESSAGE ABOVE IS THE ADVICE GIVEN TO A PERSON IN THE 1920'S ABOUT TO EMBARK ON A DIRT ROAD CROSS COUNTRY TRIP, "PICK YOUR RUTS CAREFULLY, YOU ARE GOING TO BE IN THEM FOR A LONG TIME".

I FREQUENTLY SEE A TV SCREEN THAT SAYS SOMETHING LIKE "IF PBS WON'T DO IT, WHO WILL?" I ALWAYS SHOUT BACK (FOOLISH I KNOW) "C-SPAN, C-SPAN 2, A&E, HISTORY CHANEL, AND TLC".

I REGRET THE RAGGEDNESS OF THIS NOTE, BUT TWO YEARS AGO I HAD A RATHER SEVERE STROKE; BEFORE THE STROKE, I HAD NO EXCUSE.

KEEP UP THE SURPURB WORK

[REDACTED]

I CAN BE REACHED AT PH: [REDACTED] OR AT FAX: [REDACTED]
[REDACTED] AT ANY TIME FOR ADITONAL INFORMATION. I AM PROFESSOR EMERITUS OF ELECTRICAL ENGINEERING AND HAVE LOTS OF TIME ON MY HANDS.

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