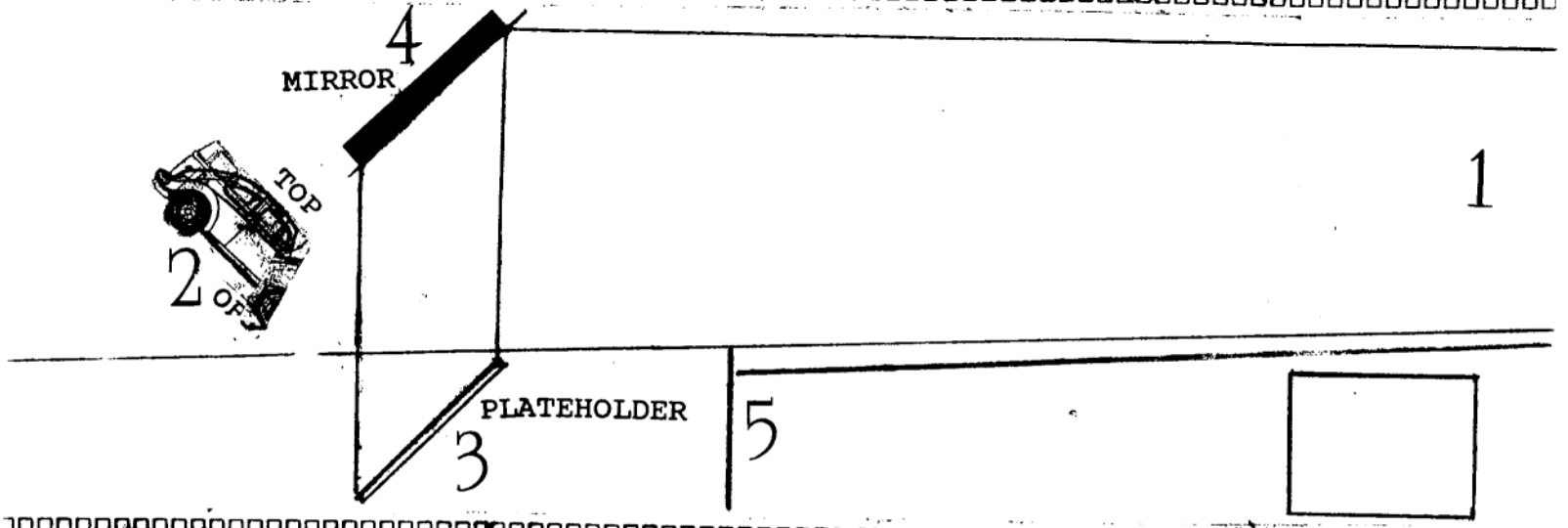
SINGLE BEAM TRANSMISSION with mirror

HORIZONTAL SET UP

1 ESTABLISH THE BEAM HEIGHT _____ ABOVE THE TABLE. FOR HOLOGRAMS TO BE USED AS MASTERS, START THE BEAM SPREADING NEARBY THE LASER WITH A SPATIAL FILTER, (ALLOWING ROOM FOR THE SHUTTER AND A POWER METER IF NECESSARY!) LET IT BOUNCE OFF A MIRROR AT THE END OF THE TABLE, AND THEN TRAVEL THE LENGTH OF THE TABLE. A 20X OBJECTIVE WITH MATCHING PINHOLE MAY BE NECESSARY.



2 MOUNT THE OBJECT IN THE BRIGHT CENTRAL PORTION OF THE BEAM. OBJECT ON ITS MOUNTING BLOCK IS TIPPED TOWARD THE LIGHT IN ORDER TO BE TOP LIT. NOTICE THE ORIENTATION OF THE OBJECT IN ITS HOLDER! ALTHOUGH THE REFERENCE BEAM APPROACHES FROM THE SIDE, THIS WILL BE THE TOP OF THE FINAL HOLOGRAM, AND THEREFORE THE OBJECT'S TOP SHOULD BE POINTING TOWARD THE REFERENCE BEAM!

3 PLATE HOLDER ON MAGNETIC BASES SHOULD BE POSITIONED AS CLOSE AS POSSIBLE TO THE OBJECT WITHOUT CASTING A SHADOW ONTO THE OBJECT. IT SHOULD BE TILTED SO THAT THE PLATE HOLDER IS PARALLEL TO THE OBJECT'S PLANE. COMPOSITION OF THE SCENE CAN BE AIDED WITH THE NAIL\NORMAL ON A CLEAR PLATE.

4 INSTALL THE REFERENCE MIRROR ON ITS OWN MAGNETIC BASE. FIND A POSITION WHERE THE REFLECTED LIGHT EVENLY ILLUMINATES A WHITE CARD WITH A NAIL PLACED IN THE PLATE HOLDER, WITH A REFERENCE ANGLE OF 45 DEGREES.
CAUTION: REFERENCE BEAM PATH SHOULD EQUAL OBJECT BEAM PATH LENGTH. MEASURE SPATIAL FILTER TO OBJECT TO PLATEHOLDER PATH WITH A PIECE OF STRING, THEN COMPARE IT TO THE DISTANCE FROM SPATIAL FILTER TO MIRROR TO HOLOPLATE. REPOSITION MIRROR IF NECESSARY. (PATH LENGTH DIFFERENCE TOLERANCE WITH OUR LASERS = 4 INCHES.)

5 BLOCK STRAY LIGHT, ESPECIALLY ANY THAT MIGHT COME FROM BEHIND THE HOLOPLATE THAT COULD ACT AS A SECOND REFERENCE BEAM!

CHECK POLARIZATION VECTORS.

READ BEAM INTENSITIES AND THEIR RATIO.

EXPOSE AND DEVELOP.

10/13/90 Eu