Manipulate[
  Graphics3D[
    Frame,
    {Thick, Red, Line @ Append[Line, s @ (p + (s, -s, 0))]},
    pov1 = s @ (p + (s, 3)),
    ViewPoint = (0, 0, 5),
    PlotRange = {{-6, 6}, {-6, 6}, {-6, 6}, {0, 0}, {0, 0}},
    Initialization : = {
      Global constants
        r = 1.0,
        pl = .5; (* plot range *)
        s = pl; (* half side of projection plane *)
        spt = (0, 0, r, r);
        spt = (0, 0, -r, -r);
        f = 16; (* facet size *)
        ps = pl; (* point size *)
      },
      pov1 = PolyLine @ {(-s, -s, -s), (-s, s, s), (-s, s, -s), (-s, -s, s),
                       (s, -s, -s), (s, s, s), (s, s, -s), (s, -s, s)};
      (* functions *)
      sproject @ Point @ p onto plane@ = (p[[1]][[1]], p[[2]][[2]], -s);
      (* length of projection line *)
      plen @ p = Norm @ p - spt;
      (* angle between axial and projection line *)
      @ p = ArcTan @ Cross @ p / plen @ p; /*
      Projection Point on the Plane
      Use cosine law to solve for s, which in this case corresponds to the
distance s - spt.
      c^2 = a^2 - b^2 - 2ab Cos[alpha]

      Consider triangle spt - s - p. The angles at spt and s are both s.
      Then the angle of the segment in Pi - 2b. Let the segment length be c.
      Cosines:
      c^2 = a^2 - 2 a c Cos[alpha]
      = 2 s^2 - 2 s r Cos[alpha]
      = 2 s^2 - 2 s r Cos[Pi - 2b]
      c = Sqrt[2] s Sqrt[1 - Cos[Pi - 2b]]
      };
      (* length of segment *)
      slen @ p = Sqrt[1 - Cos[Pi - 2b] @ p];
      (* a vector *)
      v @ p = 1 (p @ pt / plen @ p @ (p @ pt @ spt));
      (* projection cone sphere *)
      @ p = Sqrt @ pt // !
      ];
      Graphics3D: Points and Lines
      ass = {Red, Thick, Line @ {{-2, 0, 0}, {-2, 0, 2}},
             Line @ {{0, 0, 0}, {0, 0, 2}},
             Line @ {{0, 0, -2}, {0, 0, 0}}};
      spherept = Point @ spt; Sphere @ spt; Sphere; Sphere;
      *sphere = Line @ {{-pl, pl}, (0, pl, -r), (0, pl, r)};
      Graphics3D: Points and Lines Functions
      (* a disk around the projection point on the plane *)
      @ p = (LightGray,Opacity .75,Cylinder @ pt @ pt @ pt @ pt + (0, 0, .0, .01));
      *sphere pt = {Red, PointSize pt, Point @ sphere @ pt}];
      v @ pov1 = {Black, Thick, Arrowheads @ .02, Arrow @ sphere @ pt @ pt}];
      (* CONNECTED GRAPHICS PRIMITIVES *)
      Frame : = {
        Opacity .75, Spheres @ {0, 0, 0}, color},
        Point @ {0, 0, 0},
        spt, color,
        crosspt, xcrosspt,
        projection point
      ];
      Initialization : = {
        Text @ Style @ "Stereo" @ Bold, Sphere @ {.05, .05, .2}],
        Text @ Style @ "", Bold, hvh, pov1 @ pt @ {.2, .2, .2, .2}];
      Text @ Style @ "", Bold, hvh, @ pt @ pt @ {.2, .2, .2}]}
  ]
}