A Fork-Lift Device for Changing Collimators on the Pho/Gamma Camera

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In a nuclear medicine department that uses a gamma camera, and particularly in departments with two or more cameras, considerable time is spent changing the collimators and much space is used in storing them. Most of the "down-time" in changing the collimator arises from the time taken to raise or lower the gamma camera head to match up with the collimator stand. Time is also lost moving collimators about on their awkward triangular frames.

Our department has two Pho/Gamma cameras and eight collimators. Both cameras are in the same large room, with the eight collimators in the adjacent corridor.

We were anxious to devise a system in which (A) the collimators occupied as little space as possible;

FIG. 1. Vertical collimator rack constructed of steel angles to accommodate eight collimators.

FIG. 2. Hydraulic lift modified to accommodate collimators.

and (B) the collimators could be transported and raised or lowered to the appropriate position as swiftly as possible.

We, therefore, designed and built a vertical collimator storage rack (Fig. 1). This apparatus is 48 in. high, 26 in. wide, and 24 in. deep, has eight shelves, one for each collimator, and is constructed of steel angles.

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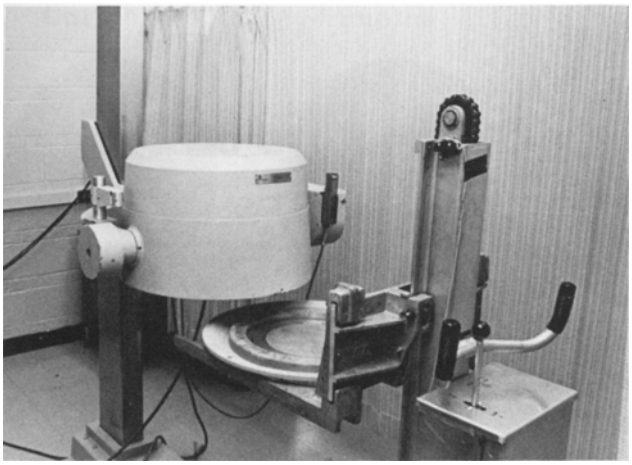

FIG. 3. Hydraulic lift raising collimator to meet camera face.

The collimator transport system consists of a commercially available hydraulic lift (Fig. 2), which has been modified to carry a collimator. The hydraulic lift is battery operated and is recharged overnight to insure reliable operating conditions.

When in operation, the hydraulic lift is moved to the collimator rack under its own power. The fork is raised to the appropriate collimator shelf and advanced beneath the rims. The collimator is then lifted off the shelf and moved to the gamma camera. The base of the hydraulic lift has been designed to fit precisely between the stand of a Pho/Gamma camera so that when it is in place, and the collimator has been raised to meet the camera face, the guide-pins and screw holes are all in line (Fig. 3). Once the collimator is secured, the fork is lowered and the device moved away. The hydraulic lift and its motor are operated by simple controls.

Since the machine and storage rack came into operation, there has been a considerable saving of "down-time" on our two cameras—largely because of the shorter time taken to place the collimator in position. In addition, the corridor is no longer cluttered with the old triangular collimator carts.