

SANTA FE RAILWAY
SAN BERNARDINO SHOPS

HISTORY AND GENERAL CAPABILITIES

San Bernardino is located 60 miles east of Los Angeles, at the base of the San Bernardino mountains, and is the division point for Santa Fe Railway's Los Angeles Division. It is one of the more important mechanical facilities on the Railway's 12,000 mile system.

The Shops were constructed at San Bernardino in 1886. Improvements on the site consisted of a 10-stall, brick roundhouse with a 60 foot turntable, a machine shop and blacksmith shop. The overall size of the mechanical facility is 106 acres, with approximately one million square feet or 22 acres under roof. The major shop buildings were constructed between 1920 and 1930. A history of San Bernardino County, published in 1904 said, "During the busy season about 800 men are employed and the San Bernardino payrolls vary from \$40,000 to \$60,000 per month." The Railway paid good wages in those days, but those figures are only a fraction of the annual payroll of today's 637 employes. Santa Fe is the oldest employer in town with a continuous payroll since 1886.

Santa Fe also helps support the community by paying over \$1,225,000 in local taxes annually. In addition to taxes, the shops purchase in excess of \$62 million of material annually, a portion of which comes from community sources.

San Bernardino Shops remanufacturing services and heavy repair capabilities are dependent upon safety being practiced, both on and off the job. In fact, the first rule in our Safety Rule Book states, "Safety is of the first importance in discharge of duty."

San Bernardino Shops is primarily responsible for remanufacturing and performing heavy repairs to locomotives and cars assigned to the Coast Lines Grand Division. The Coast Lines stretch between Eastern New Mexico, westward to the Pacific Coast, including San Diego on the south and Sacramento on the north. The Shop is assigned nearly 600 of the Santa Fe's 2,000 locomotives and each is brought into the shop for classified overhaul repairs after operating 650,000 miles. In addition, during 1985, San Bernardino shops completely remanufactured and modernized sixty 2500 to 3600 H.P. locomotives and 108 classified repair locomotives. 1986 production schedule includes sixty 3600 H.P. SD45-2 remanufactured locomotives and 94 classified repairs on various types of locomotives. As information, San Bernardino Shops' remanufacturing production capacity, based on a three-shift, seven-day operation, would be 156 locomotive units annually. This is a 96 unit increase above our present production requirements. San Bernardino is one of the few shops

capable of remanufacturing and reconditioning various locomotive and car components for use at other points on the railroad. The locomotive components include complete engines, power pack assemblies and trucks. We also make extensive heavy repairs to locomotives and cars damaged in derailments.

Our Traction Motor Shop includes automated welding and machining center for traction motor frames, wire banding and high frequency brazing machines for traction motor armatures, new automated main generator armature undercutter and many other improved machines and fixtures. Utilizing this equipment, San Bernardino Traction Motor Shop remanufactured and reconditioned 3,500 traction motors (14 per day), and 250 main generators during 1985. Based on a three-shift, seven-day operation, our remanufacturing/reconditioning production capacity would be 9,800 traction motors (27 per day), and 400 to 800 main generators (depending on type) annually. This is an increase of 6,500 traction motors and more than doubles main generator production.

San Bernardino Shops also has primary responsibility for high mileage maintenance of Santa Fe's 10-Pack fuel foiler articulated TOFC and COFC cars. Santa Fe's current fleet of 10-Pack equipment totals 50 cars (10 platforms each). This equipment is normally operated in unit type trains with a consist of ten cars carrying 100 trailers. This permits a 10-Pack TOFC unit train to depart from Chicago and Los Angeles daily. Also, we were the development site for Santa Fe's new concept "A" Stack fuel foiler containers. This prototype equipment is presently being utilized for commercial loading and is assigned to our shop for periodic evaluation.

In addition to San Bernardino Shops' capabilities, we have available at Topeka, a 96 man engineering group and technical staff to assist with locomotive and car projects.

The Purchases and Materials Department has been in existence at San Bernardino since the beginning of the railroad's operation in 1886. This department purchases and ships over \$76 million in materials each year to various locations throughout California and parts of Arizona (Coast Lines). The computerized inventory is controlled to the extent that the department is presently operating on 26 days stock of inventory on hand. Present employment in the Purchases and Materials Department is 55 employes. The department is service oriented to supply the material requirements of the using departments.

Santa Fe's Computer System M.M.S. (Mechanical Management Systems) utilized at San Bernardino, is comprised of over 200 CRTs (cathode ray tube) and printers located across the System in all areas where work is being performed on our car and locomotive fleets. Repairs to cars, locomotives and components are captured at the work site and entered into the CRTs, which up-

dates our Central Computers 58 mechanical data bases from one or more of our 250 programs. Different programs maintain our on-line history files, status of our fleet, pricing and repairs and a number of other activities. Our on-line data bases (immediately available information) contains in excess of 5 billion characters of data and an average of 40 thousand mechanical transactions are registered by our central computer every day. Mechanical Department managers constantly monitor repairs looking for problem areas and trends, and use the data to assist in decision making regarding equipment purchase, quality of material, remanufacturing and repair programs. At San Bernardino, we use computer generated information to determine history of cars, locomotives and components having abnormal problem and failure rates, and to determine quality of repairs after equipment is released from our shops.

San Bernardino, California
May 15, 1986