

Mr Hideo Shima (1901—1998)

Mr Hideo Shima, former Vice President for Engineering of Japanese National Railways (JNR) and former President of the National Space Development Agency (NSDA), died in Tokyo on 18 March 1998, aged 96.

Mr Shima was the son of Yasujiro Shima, himself a distinguished mechanical engineer who later became Chief Engineer of the Government Railways (See *JRTR* 6, p. 41).

Mr Shima started his career as a locomotive designer at the Government Railways in 1925, after graduating from the University of Tokyo in mechanical engineering. By that time, due to the efforts of his father, the Government Railways had built a series of narrow-gauge steam locomotives ranking among the best in the world. Mr Shima worked hard to further develop powerful steam locomotives, culminating in the wartime 2-8-2 D51 and D52 for freight and the post-war 4-6-4 C62 for passenger trains. Although these locomotives attained the highest performance among Japanese engines, Mr Shima knew that Japan's post-war railways could not make great progress while bound to the narrow gauge and old-fashioned steam traction.

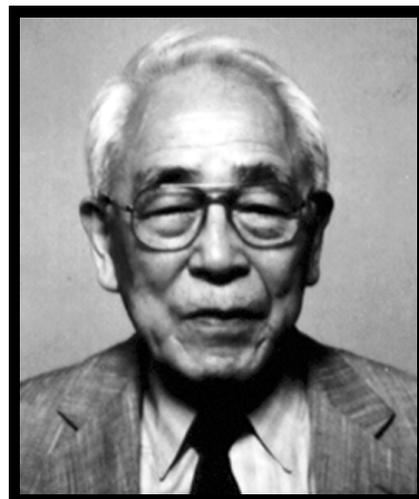
Railway lines in Japan have numerous gradients and curves with fragile infrastructure allowing a maximum axle load of only 16 tonnes and imposing severe constraints on locomotive design. Mr Shima believed that use of multiple power units could solve this problem. In comparison to a loco-hauled train, considerably higher output can be produced by a multiple-unit train without damaging tracks and structures, because motive power can be distributed along the whole train length.

In the pre-war days, EMUs were used only for sub-

urban services in the metropolitan areas around Tokyo and Osaka. People thought they were noisy and bumpy. Mr Shima challenged this false assumption and successfully introduced a new series of medium-range EMUs serving 150 to 200 km around Tokyo. Their better riding comfort won a good reputation, and the higher acceleration increased line capacity. As the length of electrified main lines grew through the 1950s and 60s, JNR replaced most loco-hauled passenger trains with EMUs except on some sleeper services. DMUs were also used extensively on non-electrified lines. In 1951, Mr Shima resigned as Head of JNR's Rolling Stock Department, taking the blame for a serious train fire caused partly by poor war-time rolling stock.

In the meantime, Japan's economic recovery brought high growth in rail traffic and the Tokaido Main Line between Tokyo and Osaka became almost saturated by the mid-1950s. It was clear that a new double track was necessary for the Tokaido, but the railway professionals were split into two camps, one favouring quadrupled narrow-gauge tracks, and the other favouring a new standard gauge line. The newly appointed JNR President, Mr Shinji Sogo was a firm supporter of the standard gauge, and he asked Mr Shima to return to help him. Mr Shima finally accepted and became JNR's Vice President for Engineering in 1956; he developed the technologies for a high-speed train running at 200 km/h or more.

Although many people at that time were sceptical of high-speed trains, the two men's firm belief and effective leadership gradually persuaded their opponents. The so-called 'bullet train' or 'dreamy super train' was nothing new for Mr Shima, who had demonstrated the advantage of distributed



motive power many years earlier. When told by a World Bank official that Bank funds would not be made available for an experimental project, he replied quietly that the shinkansen was not experimental, but was a combination of fully-proven techniques. Nevertheless, the shinkansen was an entirely new type of railway, which opened a new era in land transport.

Mr Sogo was not appointed to a third term as JNR President due to the budget overrun of the shinkansen construction, and Mr Shima resigned with him in 1963. Although both men were no longer at JNR to see the opening of the Tokaido Shinkansen in 1964, their names will always be associated with the shinkansen—Mr Sogo as its political father, and Mr Shima as its technical father. Mr Shima was awarded many prizes including the Sperry Prize by the American Society of Mechanical Engineers, and the James Watt Gold Medal by the British Institute of Mechanical Engineers.

Mr Shima became President of the NSDA in 1969, where he led Japan's space development programme until 1977. For his outstanding achievements in both railway and space engineering, he was awarded the Order of Cultural Merit in November 1995. Mr Shima has written a memoir about the birth of the shinkansen for *JRTR* 3. ■

[T. SUGA]



Although Messrs Sogo and Shima had resigned in 1963, they were invited unofficially by JNR engineers to a test run of the first production-type shinkansen in early 1964. Mr Shima (wearing hat) standing with Mr Sogo in first-class coach (left), in driver's cab (centre), and seated in second-class coach (right).

(Photos: Akira Hoshi)