

**Heart of the Dragon** video series**“Working”**

DS799.23 .H42 1985 Tape 6 and

VHS DS 779.23 .C46 1993 telecourse version

This 1982 documentary reflects the early reform period in which heavy industry remained under the Chinese central planning system, modeled after the 1950s planning system of Stalin's USSR. This factory was one of 156 heavy industry projects built with Soviet foreign aid in the mid-1950s; the train design is likely one I saw in use in Siberia in the late 1970s.

To understand the challenges of urban-sector (manufacturing) reforms, we need to trace the weaknesses (and perhaps strengths) of planning, which was common to China, North Korea, the USSR and the Warsaw Pact of Eastern Europe. Today the only CPE (centrally planned economy) remnant is North Korea. However, the underlying issues are pervasive in modern large-scale business, where internal operations are managed by focusing on quantities rather than prices.

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Datong ... is very much an ‘unattraction.’ It is another Chinese city that has historically enjoyed moments of greatness, and nowadays has very little to show for it. Along with the ravages of time, earthquakes and recent demolition work have robbed Datong of any charm. Today it is ugly, polluted and poor, and all accentuated by its status as one of China’s leading producers of coal. ... [*Lonely Planet 1996*]

**History:**

The town was founded as Píngchéng (平城) ca. 200 BC during the Han Dynasty, in a region first conquered by the Zhou dynasty in 457 BC. Located near the important Great Wall Pass into Inner Mongolia, it was a stop-off point for camel caravans to central Asia. In the 5th century AD, the Toba, a Turkic-speaking people, succeeded in unifying all of northern China and forming the Northern Wei Dynasty; Pingcheng was China's capital for a century, from 398 AD until 494 AD, then the capital was moved to another location. The city was renamed Datong in 1048 AD after being sacked in a dynastic war; it was sacked again in 1649 during the Ming-Qing transition. The current Datong thus dates to 1652, when rebuilding began.

The Toba of the Northern Wei adopted Chinese ways, and under their administration trade, agriculture and Buddhism flourished. The Hanging Temple (悬空寺 Xuán Kōng Sì) dates from the 5th century, as do the Yungang Grottoes (云冈石窟 Yúngāng Shíkū), both located outside the city proper. Many of the 50,000 Buddhist images in the caves date from that era, though there were subsequent restorations in the 11th and 12th centuries. These sites contain some of the oldest examples of stone sculpture in China. Reflecting its location along the central Asian caravan route, the surviving artwork includes depictions of Persian and Byzantine weapons, Greek tridents and the acanthus leaves of the Mediterranean, and images of the Indian Hindu gods Vishnu and Shiva. The Chinese style is reflected in the form of Bodhisattvas, dragons and flying apsaras (celestial beings rather like angels).

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Datong is the northernmost city of Shanxi. At an altitude of 1,000 m (*do the conversion yourself*) it has cold winters and (as a basin) broiling summers. In the 2010 Census downtown Datong had a population of 580,000, the city proper had a population of 1.57 million and the overall administrative district 3.3 million (800 square miles, a bit bigger than Rockbridge County). The revised 2012 number (from Baike and from the Chinese Wikipedia) gives a population of 3.3 million people.

The core of the economy during the past 50 years has been coal mining; it is the home of China's 3rd largest mining group. Due to the access to energy and its location at a transportation nexus (including 2 major train lines) heavy industry also developed. The most prominent of the latter is the Datong Locomotive Factory, begun as a Soviet aid project in 1953, and helped by Datong's locus as a junction of

two major railway lines. It was the last factory in China, and perhaps anywhere in the world, to make steam engines for regular railway use; the last locomotive was completed on 21 December 1988.

Thereafter the plant switched to making diesel locomotives, and from 1990 also started making electric locomotives, reflecting the switch in railway motive power from coal to diesel to electric. In 2003 the overall railway manufacturing industry was restructured, and the locomotive factory became a subsidiary of China CNR Corporation.

CNR Datong Electric Locomotive Co. Ltd. (中国北车集团大同电力机车有限责任公司) now builds high-speed rail locomotives. As part of that process it has entered into joint ventures and technology licensing agreements with ABC Rail Products, Stenmann, Alstom, ABB, SEMCO and Faiveley. (*The recent train and subway crashes all appear to be due to signaling systems, not the trains or train tracks themselves.*)

**Source:** Chris Taylor et al., *China: a Lonely Planet travel survival kit*. 5th ed. Victoria, Australia: Lonely Planet Publications, 1996. 459f. *Also draws upon the October 2011 versions of the Wikipedia entry for "Datong" and for the "Datong locomotive factory" plus a scan of Wiki entries in Chinese, Japanese (and to see whether the locomotive was originally a French design, Russian).*

**Links:** Along with entries for "Datong" in [English](#), [Chinese](#) and [Japanese](#) in Wikipedia (the content in different languages is *not* identical) and Baidu's [百科](#), you can go to the city's home page: <http://www.dt.gov.cn/Index.html> as well as its newspaper [大同日报](#).

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### Points to Ponder

- What does the locomotive factory offer its employees as an SOE (State-Owned Enterprise)?
  - What production steps does it undertake?
    - Do any of these strike you as unusual?
    - Why make its own steel?
  - What issues with productivity improvement are apparent? [*Are tasks really "overmanned"? – as a capital-scarce economy, especially in 1982, using lots of manpower was sensible.*]
- What of the power structure and decision making framework?
- What is the role of party *versus* technocrat or manager?
- How do labor markets function during this time period?
- Education? Aspirations? Sense of dynamism or at least change?
- Culture: is the old "taboo?" (*cf. the Cultural Revolution era*)
- Pollution? other externalities?

### Extension

To improve the rail system, China moved to diesel-electric locomotives, which are more efficient, don't require frequent stops to take on water, and are much more powerful.

- A more powerful engine can pull a far larger number of cars. But if you had that much power in a small steam locomotive, what would the wheels do? (Think drag racing...) Hence what other changes need to be made to the tracks and roadbed?
- In a CPE context, who then has to "sign off" on such changes?

This is not hypothetical – there's a nice case study of this very challenge for the Soviet Union.