Shu roads – from the Qin Dynasty to the Sichuan earthquake

David Jupp, Brian Lees, Li Rui, Feng Suiping
Outline

- The What and Where of Shu Roads & Plank Roads

- What is 3S?

- History & Geography, Literature & Culture

- Modern Shu Roads

- People & Environment

- Conclusions

- Web Site & Contacts
The What and Where of Shu Roads & Plank Roads
Joining north and south China

- People have moved across the Qinling, Ba and Longmen mountains since Neolithic times.

- In the Warring States Qin built the first made road to conquer Shu (Sichuan) – The Golden Ox Road.

- Plank road technology enabled people to move vehicles through areas with gorges and rapids.

- The Han dynasty started in Hanzhong and emerged to take China via the Guanzhong…….
Different Types of “Trestle” road - 不同形式的栈道

Baoxie “Trestle” Road

Mingyue Gorge, Sichuan

石积式栈道

四川明月峡栈道
Where are the Shu Roads?

Land within The Passes
Qinling Mountains
Hanzhong
Ba Mountains
Shu (Sichuan)
Post Holes in Cliffs where the Plank Roads went
Reconstructed Plank Road by the Stone Gate Reservoir
Plank Road Technology

- People used river valleys to move between the three basins of “Guanzhong”, “Hanzhong” and “Shu”

- Plank roads enabled fierce rapids and gorges to be traversed – today people use tunnels

- High passes or “barrier passes” between watersheds completed the connections

- The result was a network of Shu Roads
Route Map of the Shu Roads
The Australia-China Council supported us in a project on Shu Road history with Hanzhong Museum. The Shaanxi Provincial Government and Chinese Academy of Sciences at Yangling also supported the project. The project is now complete.

We held an International Symposium in Hanzhong on the Plank Roads and “3S”, its applications to history, conservation of relics and tourism in May 2007.

We developed Google Based maps of the Shu Roads, a website to distribute information and set up a pilot study of detailed terrain mapping in the Stone Gate relic area.
What is 3S?

Checking the GPS on the Baoxie Road in 2005
“3S” is shorthand for “Remote Sensing”, “GIS” and “GPS”
Remote Sensing involves information taken from satellites, aircraft and balloons
GIS is the management of maps and other georeferenced information
GPS is the technology of positioning using satellite geodesy
These are the tools with which people undertake Geographic information Science (GISc)

3S是中文对遥感、地理信息系统和全球定位系统的简称
遥感是从卫星、飞机和气球上得到信息
地理信息系统是管理地图与其它带有地理坐标要素信息的系统
全球定位系统利用卫星大地测量技术进行定位
这些是研究地理信息科学的工具
3S illustrated in one picture – 3S 集于一图

NWISWC

GPS Track

Hanzhong Museum

Zhang Qian Tomb

蜀道观测

杨凌水保

GPS航迹

汉中博物

张骞墓
History & Geography, Literature & Culture

The Battle of Dingjun Mountain
The Mountains make the History

- The Qinling was a formidable barrier, the mountain roads were the scenes of war and conquest as well as inspirations for literature, art and poetry

- The rise of the Han started from Hanzhong, the Three Kingdoms saw Wei battle Shu; and Tang Minghuang lost his favourite and fled to Shu along the Golden Ox Road

- Song and Jin fought until the Mongols swept them away, Marco Polo travelled the Shu roads in the Yuan, and Ming and Qing battled rebels for Shu through the same routes
Ancient scrolls map the places and activities along the road (sometimes artistically)

The details and annotations show the tracks linking the places along the way and their place in the terrain

Shimen – Stone Gate & Tunnel
Ancient scrolls map the places and activities along the road (sometimes Functionally)

Shimen (Stone Gate) and the Lianyun Road to Baocheng
Along today’s Baoxie Road

The Modern Shu Roads
Modern Shu Roads

- Some things remain as they have been for centuries and others have been replaced by the most modern technology.

- In 1943 the roads to Shu were still “hard” but today a major freeway links Xianyang to Hanzhong in two hours.

- Tourists are joining intrepid travellers and wilderness has become an attraction rather than a hardship.
The Temple at Jitou Guan – still in use, if you can climb and the old road is there to hike along.

Scroll Map

Today

Moore Family Photograph Approx. 1940
The Road to Shu was still hard in the 1930’s and 1940’s

Old Road
Baoji to Hanzhong
1930’s & 40’s

Pictures provided by Frank Moore and Hanzhong Museum
But sometimes the roads to Shu are still “hard”
A Memorial to Shu Roads on the Xihan Tollway
People & Environment
Life on the Shu Roads is still an older China

Farmers Market in Fufeng

Street scene in Hanzhong

Qing period buildings in Gu Jiange

Laowai are still interesting
Wilderness and Refuge

- The wilderness was refuge for people from armies and animals from humans

- Today, the reserves and mountain scenery are as attractive as the history

- Conservation and preservation of historical relics and wildlife habitats are going hand in hand

- Panda, Macaque, Golden Monkey, Crested Ibis and Musk Deer all have reserves near Hanzhong
Tourism and Travel have been increasing

Signboards at Jiangwozi

Guides (导游) are an important Profession in China
The Qiang People

- Since Han times (some say the Xia Dynasty) the Qiang have lived in the mountains behind Sichuan Plain and along the Jialing River.

- Distinctive culture and language, but history largely unwritten and ignored in Chinese dynastic records. Will have played a large part in the secondary road trade that avoided taxes and armies.

- Now a recognised minority people and part of a “Qiang Cultural and Ecological Protection Experimental Area” including the unique culture and ecology of their area.
Qiang Temple of the River God, Lueyang

Stage for Qiang “Opera”. Stopped due to competition from TV
Worlds in Collision – Geology Rules

Xi’an
Qinling Mountains
Hanzhong
Ba Mountains

Bailongshui
Tangjiaba
Longmen Mountains
Wenchuan
Chengdu

蜀道观测
The Dragon Gate Opens

- At 14:28 on May 12, 2008 (512) the Longmen fault slipped and the shear wave travelled as far as Beijing and Shanghai rocking tall buildings from which ran frightened people.
- The people in the mountains had nowhere to run and also faced aftershocks some of more than magnitude 6 that still occurred as late as September and October.
- Many Qiang people died or were made homeless among the more than 70,000 victims in the disaster area. Relief and rebuilding are still in progress.
- In the future people will rebuild their lives and people from all over the world can help them – including by visiting and getting to know them.
Fault Lines of the Wenchuan Earthquake

汶川地震所处的龙门山断裂带恰好穿过四川省自然保护区最为密集的一个区域。
The great Wenchuan earthquake
Conclusions
Mountains, Rivers and Lakes

- The Qinling, Ba, Longmen are areas of mountains, rivers and lakes – wild and formerly inaccessible but are now open to explore.
- A “Shu Roads Ecological and Historical Tourism Route” exists in China – but is still unknown outside.
- The “Plank Road Spirit” is a part of China’s culture and an inspiration for modern road and rail development. It will be needed to rebuild in Sichuan.
- Our project had some technical aspects but its real aim was to open up contacts, expand interactions and introduce western people to this part of China’s history and culture.
- Time will tell….
Shu Road Project Web Site

http://www.qinshuroads.org/
Acknowledgements

- NASA for MODIS & SRTM images
- Digital Globe and Google Earth for material
- Hanzhong museum for photographs of relics
- China “Man and Biosphere” magazine for scanned photographs of the Wenchuan Earthquake
- Frank Moore for old photographs of the road to Hanzhong
- Li Lingtao and Zhang Meiyi for their contributions to translations between English and Chinese during the Project
Thank you for listening - 谢谢你的聆听

Reconstructed Plank Road

Stone Gate Reservoir

蜀道观测

重建的栈

石门水