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## ROUTES

IN

## RUSSIAN CENTRAL ASIA,

SECTION III.

## THE HERAT LINE OF ADVANCE.

COMPILED IN THE

INTELLIGENCE BRANCH,

DIVISION OF THE CHIEF OF THE STAFF,

ARMY HEAD-QUARTERS.

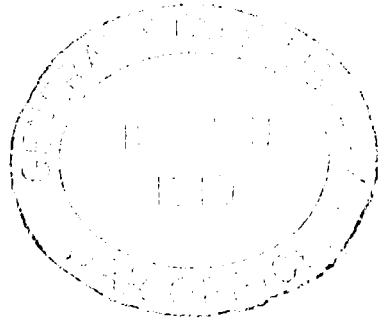


SIMLA ;

PRINTED AT THE GOVT. MONOTYPE PRESS,

1909.





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## P R E F A C E .

All routes in Russian Central Asia are divided into 3 Sections, *viz.*:—No. I, the Pamir line of advance ; No. II, the Kabul ; and No. III, the Herat. This Volume, Section III, deals with all routes in Russian Central Asia lying west of the Amu Darya (Oxus).

Routes 1 to 39, inclusive, describe the roads leading southwards from the Central Asian Railway to the Russo-Afghan and Russo-Persian frontiers, with their lateral connections. Routes 40 to 56 deal with the roads north of the railway. An index map in the pocket gives the number of every route.

All officers, to whom this book is issued, are particularly requested to bring immediately to the notice of this Division any errors that they may observe and also to forward any additional authenticated information which may reach them.

W. MALLESON, *Colonel,*

SIMLA ;  
13th Sep. 1909. ) *Assistant Quarter Master General,*  
*Intelligence Branch,*  
*Division of the Chief of the Staff*



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I. LIST OF ROUTES, RUSSIAN CENTRAL ASIA, SECTION III—  
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II. Skeleton Map of "Routes in Russian Central Asia, Section III," 1909. In pocket at end.



## Route No. 1.

### FROM CHARJUI TO KERKI (KARKI).

*Authorities and date.*—Komarof, 1886. Russian 5-verst map, 1890. Russian Route Book, 1893. Lance-Naick G. S., 1904-05.

*Epitome.*—Length 132·2 miles, stages 10. Main road to Kerki unmetalled, but flat and suitable for artillery and wheeled transport throughout; in stages 4 to 8, however, there is heavy sand. The road traverses the strip (1 to 4 miles wide) of cultivated land on the left bank of the Amu Darya. Numerous irrigation cuts (from 5 to 10 feet deep) crossed by wooden bridges. Water and fuel plentiful. Supply of wheat and barley only sufficient for the wants of the inhabitants, mainly Arsari (Ersari) Turkomans, as more than half the cultivated area is under cotton. In good years there is surplus dry lucerne (*beda*), which is sold to contractors. Transport obtainable in considerable quantities; in 1886 the numbers were put at 1,447 horses, 2,280 donkeys, and 2,027 camels. There were also 7,179 cattle and 34,125 sheep. The ordinary traffic of the road is by *arbas*, which take 5 or 6 days. The Russian mail, carried by a single Turkoman sowar, without relief, takes 5 days. There is a telegraph line, stated to have one wire only, between Charjui and Kerki. It extends to Termez. Between Charjui and Kerki are 4 Frontier Guard Posts of 25 men each, but their exact location is not known.

*Alternative routes.*—(1) By steamer, which leaves Charjui at 8 A.M. on Tuesdays and does the 141 miles in 3 to 4 days. Down stream one day. This is according to the official time table, but the times given are often exceeded. Fares: 1st class, £0-13-3; 3rd, £0-4-5. The service is usually interrupted in winter, owing to ice and low water. In 1907-08, the boats did not run from December 28th to February 20th.

(2) By road, up right bank. See Routes in Russian Central Asia, Section II.

©Charjui (pop. 4,068 in 1901), height 630 feet, is a station on the Central Asian Railway, 366·6 miles from Askhabad and 230·6 miles from Samarkand. It is the only point at which the Amu Darya is bridged.

*Connections:* at Charjui No. 6 and Section II; at Kerki Nos. 2, 3 and 5 and Section II.

ROUTE No. 1—*contd.*

No. of stage.	Names of stages.	DISTANCES.		REMARKS.
		Inter-mediate.	Total.	
1	SAKAR (SAKAR OZAR).	7·8	7·8	Direction south-east. At 3½ miles pass village of Charvak. At Sakar, as at all the stages of this route, there is a <i>caravansarai</i> erected by the Amir of Bokhara, with a rest-house for Russian officers. A camel-road goes off east-south-east to a ferry, some 3½ miles below the village of Narazim, on the right bank of the Amu Darya.
2	CHARCHANLI ..	14·6	22·4	The road continues generally south-east, running along the southern edge of the cultivated strip. To the south-west is the desert with large mounds of sand.
3	YUI SALTIK ..	16·6	39	For two miles road cuts across desert, then re-enters cultivation and passes numerous villages.
4	KURAIISH ..	14·6	53·6	Road as before. There is a ferry opposite Kuraish. Sarli is passed on this stage.
5	DASHT KUD ..	14·6	68·2	At Mamash close to Dash Kud (possibly identical with it) is a ferry across the Amu Darya.
6	PALVERT (PELVERT OR KAIBER).	11·9	80·1	Road runs close to river, often only ½ mile from the bank. Palvert is on the river bank. There is a ferry near here with one boat. These boats have a capacity of 10 horses and 50 unarmed men. Carts have to be lifted in and out by hand, and they are therefore quite unsuitable for artillery. They are poled across, rough oars being used in the deep channels only.
7	CHAKIR* ..	12·6	92·7	In this stage numerous camel tracks lead off south-west, and connect with the desert roads Kerki-Panjdeh and Kerki-Sultan Banc. (Bend). See Route No. 5. Many of the wells on these tracks only give brackish water.

\* Note.—This word appears to be a corruption of the Turki word "shigir," which means a Persian wheel.

ROUTE No. 1—*concl'd.*

8	AK TYUBE (AK TAPA OR AK TEPE).	13·3	106	At one point in this stage, the cultivated strip is over 4 miles wide. Numerous camel tracks to south-west.
9	CHAKIB * ..	13·6	119·6	A small bazar here. A mile to the east is a ferry over the Amu Darya.
10	KERKI (KARKI), 859'.	12·6	132·2	Kerki is an important place with a Russian garrison and a considerable number of shops. Goods, camels and horses cross on ferry-boats (for description <i>see</i> stage 6 above).

## Route No. 2.

FROM KERKI (KARKI) TO BOSAGA.

*Authority and date.*—Captain Peacocke (from native information) 1886. Russian Route Book, 1893.

*Epitome.*—41·8 miles, 4 stages. A camel track, crossing numerous small canals, and impracticable for artillery. The road traverses the strip, 1 to 4 miles wide, of cultivated land between the left bank of the Amu Darya and the sands of the Kara Kum desert. Going difficult in flood time. Wheat and barley only sufficient for the inhabitants (Ersari Turkomans). They own "considerable" numbers of cattle, sheep, camels, horses and donkeys. Fuel and water plentiful. Telegraph line along route.

An *alternative route*, fit for carts and slightly shorter, crosses the river at Kerki and runs along the right bank to Ak Kum; thence by ferry to Bosaga, *see* Section II.

*Connections*: at Kerki, Routes 1, 3, 5 and Section II; at Bosaga, Route No. 5 and Routes in Afghanistan, N.-W., 71-A.

No. of stage.	Names of stages.	DISTANCES.		REMARKS.
		Inter-mediate.	Total.	
1	KIZIL GA ..	13·3	13·3	Kerki is stage 10 of Route 1. General direction of road south-east, along southern edge of cultivated strip. At 5 miles hamlet of Et Bash.

ROUTE No. 2—*concl'd.*

2	KIZIL AYAK (KIZIL YAK OR KIZIL AK).	6·6	19·9	At about 1½ miles, road forks. The right hand branch leads south-south-west to Zaid and Andkhoi,
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*see* Route 3); the Bosaga road turns left and runs due east. Frontier Guard Post of 20 men.

3	KHATAB (KATAB).	10·6	30·5	At Khatab a ferry with one boat, used for local traffic only. These ferry boats have a capacity of 10 horses
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and 50 men (*see* Route 1, stage 6). Frontier Guard Post.

4	BOSAGA ..	11·3	41·8	A Frontier Guard Post of 20 men, which has been known to be strengthened by a detachment of 100 men from
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the garrison of Kerki. There is a ferry to the post of Ak Kum (Section II), one boat, similar to that at Khatab. Logofet, who visited Bosaga in the summer of 1903, describes it as a pleasant halting-place. He crossed in a steel cutter with air-tight buoyancy chambers, belonging to the Frontier Guard, but does not say if it is kept permanently at this ferry. It took about 15 minutes to reach the right bank.

Bosaga to Khamiab (Afghan) is about 3 miles continuing up the strip of cultivated ground. The Russo-Afghan Frontier runs south-west from a point on the Amu Darya, about 1½ miles from Bosaga. The journey Kerki to Khamiab is sometimes made in 3 stages, given as Sarai Maksom, Mirza Beg and Khamiab.

## Route No. 3.

## FROM KERKI (KARKI) TO ANDKHOI.

*Authority and date.*—Vambery, 1863. Major Holdich, 1886, Russian Route Map, 1893.

*Epitome.*—63·7 miles or 64·3, if the alternatives to Nos. 3 and 4 stages are taken, in 4 stages. It is a caravan route, suitable for camel transport. Nobel & Co., who have a depôt at Kerki, export kerosine by this road to Afghanistan. Irrigation canals in stage 1 and heavy sand in the remaining stages, which traverse the desert of the Kara Kum, render this route impracticable for field artillery. Water plentiful in stage 1; at Zaid, stage 2, a caravan of 400 camels and 200 horses and donkeys was watered in autumn 1863. In stages 3 and 4 (40½ miles) no good water, except when the tanks at Sultan Robot are full. If the alternative stages 3 and 4 are taken, the water-supply is better, as there are 6 brackish wells at Imam Nazar. Forage and fuel obtainable on stage 1; but, though it lies through

ROUTE No. 3—*contd.*

cultivated country, the natives have no wheat or barley for sale. On stages 2, 3 and 4 nothing obtainable except camel-thorn.

*Connections*: at Kerki, Routes Nos. 1, 2, 3, 5 and Section II; at Andkhoi, Routes in Afghanistan, N.-W., Nos. 71 and 72.

No. of stage.	Names of stages.	DISTANCES.		REMARKS.
		Inter-mediate.	Total.	
1	KIZIL GA ..	13·3	13·3	General direction south-east, road traverses the cultivated strip between the left bank of the Amu Darya,

and the desert.

2	ZAID (CHAH-I-ZED or ZEID).	9·9	23·2	At about 1½ miles road to Bosaga (Route No. 2) branches off to east, while the Andkhoi road continues south-south-east and enters desert. At about 4½ miles a track goes off to Tash Kuduk (stage 2 of Route No. 4). Zaid, which is a Frontier Guard Post, has one well of good, and several of brackish, water; it obtains all supplies from Kerki.
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3	SULTAN ROBAT (SULTAN RABAT).	20·6	43·8	No vegetation on the barren plains except camel-thorn. Well at Haldar dry (May 1886). At 13·9 miles Dugchi, a well of brackish water; from here two tracks lead to Andkhoi. For the more easterly see alternative stages 3 and 4 below. The other road passes the Russo-Afghan Boundary Pillar No. 65 at 18·4 miles. There is a tank at Sultan Robat and an open cistern ("kak"), ½ mile to the south.
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4	ANDKHOI (AND-KHUI), 1,060.'	19·9	63·7	At 5 miles tank of Ak Kina. At 19·9 Andkhoi (Afghan town). Holdich's map makes the last 2 stages about 22¼ and 18 miles, respectively.
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*Alternative stages.*

3	IMAM NAZAR (IMAM NASAR).	19·2	42·4	As in stage 3 above as far as Dugchi. Thence 5¼ miles to Imam Nazar, with 6 brackish and 4 dry wells (May 1886); from here a cross-track leads south-west to Sultan Robat.
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ROUTE No. 3—*concl'd.*

4	ANDKHOI (AND-KHUI).	21·9	64·3	At $\frac{3}{4}$ mile cross Russo-Afghan frontier. No houses till Khana Kala at 20 miles.
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## Route No. 4.

FROM BOSAGA TO NAIZAR BEG (KAISA BEK).

*Authorities and date.*—Major Holdich, 1886. Russian Route Map, 1893. Logofet, 1903.

*Epitome.*—41·1 miles, 4 stages. A desert road suitable for camel transport, but impracticable for field guns owing to heavy sand. No exact information as to the amount of water in the Akcha (stage 1) when in flood, but it is probably difficult to cross at that time. Water-supply bad. Nothing obtainable except camel-thorn.

*Connections :* at Bosaga, Route No. 2, and at Naizar Beg, Routes in Afghanistan, N.-W., No. 71.

No. of stage.	Names of stages.	DISTANCES.		REMARKS.
		Inter-mediate.	Total.	
1	ALI KADIM ..	8·6	8·6	General direction south-south-west, across the desert. Ali Kadim (one good well, May 1886) lies on the left bank of the Akcha water-course, in which there is water in flood time only. The Russo-Afghan frontier crosses the Akcha about 900 yards to the east of Ali Kadim, where there is a "small" post of the Frontier Guard.
2	TASH KUDUK..	12·6	21·2	At $9\frac{1}{2}$ miles a road from Zaid (stage 2, Route No. 3) to Kara Tapa Kalan ( <i>see</i> "Routes in Afghanistan, N.-W.," No. 71, stage 2) crosses the track. At Tash Kuduk, 2 brackish wells (May 1886). Another track from Zaid connects here.
3	AK KHAN BAI (AK KHAN BAI KAK).	10·6	31·8	At $6\frac{1}{2}$ miles cross Russo-Afghan frontier. There is a "kak," or open cistern, at Ak Khan Bai.
4	NAIZAR BEG (KA- IZA BEK OR NE- ZA BEG).	9·3	41·1	Naizar Beg has a well of brackish but still drinkable water; water is 72 feet below the surface. From

ROUTE No. 4—*concl'd.*

Naizar Beg to Andkhoi 20 miles; see "Routes in Afghanistan N.-W.," No. 71, stage 1.

Holdich's map shows "Neza Beg"  $\frac{2}{3}$  mile to the south-east of the track.

## Route No. 5.

FROM KERKI (KARKI) TO TASH KEPRI (AK TAPA).

*Authorities and date.*—Major Holdich, 1886. Russian Staff Map, 40-verst, 1892. Russian Route Map, 1893. Logofet, 1903.

*Epitome.*—205·9 miles, 14 stages. A difficult camel track, impracticable for field guns. Water-supply very bad; in dry weather Kerli to Suji Takan, 48·3 miles, would be waterless. No supplies, except camel-thorn in stages 1 to 6, and a little firewood in the remainder. Little is known of the hilly country north of the Kara Bel plateau, through which the last 8 stages run.

*Connections:* at Kerki, Routes Nos. 1, 2, 3 and Section II; at Tash Kepri, Nos. 7, 8 and 17.

No. of stage.	Names of stages.	DISTANCES.		REMARKS.
		Inter-mediate.	Total.	
1	ABUSH (ABUSH CHASHMA).	8·6	8·6	General direction south-west. A well of fresh water at Abush.
2	KERLI (KARLI) ..	11·9	20·5	The well of Kerli is in the middle of a water-course, which is normally dry. From here a track to Zaid
(stage 2 of Route No. 3), 21·2 miles, with one well half-way at Tapeli, where there is a small post (about 15 men) of the Frontier Guard.				
3	KAK DASHT ..	12·6	33·1	A rain-water cistern only.
4	TAMGS (TAMAS)	17·2	40·3	A dry well (May 1886).

ROUTE No. 5—*concl'd.*

5	SUJI TAKAN (SU-YUJI TOKAN OR SUJA TEKYAN.)	6·6	46·9	“Two fairly good, 12 dry wells.”—( <i>Holdich, May 1886</i> ). He makes this stage about 5 miles. From here a track <i>via</i> Chichli (Chigli) runs to Andkhoi (stage 4 of Route 3) in 2 stages of 15·2 and 25·9 miles, respectively, or 41·1 in all. Wells at Chichli dry in May 1886. Suji Takan has a Frontier Guard Post of about 15 men.
6	AMAN JUK (YAMAN JUK).	9·9	56·8	Wells dry, but a brackish well at Biglar, 1½ miles to the south-south-west of Aman Juk on another track to Chichli (May 1886).
7, 8, 9, 10 & 11	DASHT KUYUK ..	90	146·8	The Russian map of 1893 puts the total distance at 90—93 miles, which is taken as equivalent to 5 stages, of 18 miles, each, but there is no information as to halting-places. At 8 miles enter the foot-hills of the Kara Bel range. At about 30 miles a track goes off south over the plateau of Kara Bel to Kara Baba, 2,730', <i>vide</i> stage 3 of “Routes in Afghanistan, N.-W.,” No. 45. This is, apparently, one of the tracks which the Turkomans used to follow when making their forays ( <i>alamans</i> ) into the Kaisar valley (Afghan).
12	AIMAN AIJIK (ruins).	26·5	173·3	About half-way pass through some ruins.
13	CHAH-ATA-MURAD (ATA-MURAD).	12·6	185·9	At about 6 miles some ruins on the right of the road. Water at Chah-Ata-Murad, whence a track runs east 17½ miles to “Sarduz Plain.”
14	TASH KEPRI (TASH KUPRUK OR AK TAPA), 1,063'.	20	205·9	General direction south-west. Tash Kepri is a station on the Merv-Kushk (Branch) Railway, <i>vide</i> stage 10 of Route 7.

## Route No. 6.

FROM CHARJUI TO MERV.

*Authorities and date.*—Andreef, October 1881. Russian 5-verst Map, 1890. Russian 40-verst Map, 1892.

*Epitome.*—167 miles, 9 stages. An unmetalled road, practicable for field artillery and wheeled transport. This is an ancient caravan road,



ROUTE No. 6—*contd.*

which has lost its importance owing to the construction of the Central Asian Railway, by which it is 152 miles from Charjui to Merv. In October 1881 the 17th Turkistan Infantry Regiment marched by this road. The 4 companies moved at a day's interval with *arba* (native 2-wheeled cart) and camel transport. Sufficient water for each company, *i.e.*, 250 men, in addition to transport and followers, was found at each stage, except No. 4 where there was no water, and at No. 5 where it was brackish and fit for cooking and watering camels only. The 40-verst map of 1892 confirms the above description of the water-supply, but definite information as to water at stages 6 and 7 is lacking. No supplies, except grazing for camels and "saxaul" for fuel, as far as stage 8, where the Merv oasis commences.

Heights noted against stages are those of the railway-stations of the same name.

*Connections* : at Kerki, No. 1 and Section II ; at Merv, Nos. 7, 11, 12 and 19.

No. of stage.	Names of stages.	DISTANCES.		REMARKS.
		Inter-mediate.	Total.	
1	SĒLIM (SELIM KUDUK).	16	16	General direction south-west. The first 2 miles through cultivation, then enter the Kara Kum desert. At 9½ miles cross the railway. At 14 miles a ruined <i>serai</i> on the left of the road.
2	ISHAN ROBAT (ISHAN RABAT).	16	32	At 4 miles, wells of Karaul Kiu. Two wells of brackish, but drinkable, water sufficient for 1,000 men with transport animals. Four wells at Ishan Robat, of which two yield water fit for men to drink : the other two are suitable for watering camels only. Abundant fuel, but very little grazing for camels and none for horses (October 1881).
3	REPETEK, 639' ..	15	47	The road winds a good deal among sand-hills. At Repetek, 3 wells of drinkable water, yielding an "abundant" supply (October 1881). The railway-station of Repetek lies to the

ROUTE No. 6—*concl'd.*

south-west : all water used there is brought from the Amu Darya. Plenty of fuel; good grazing for camels, none for horses. The Russian 40-verst staff map of 1892 marks a camel-track direct from here to Merv, distance 80 miles. No wells are shown *en route*.

4	ULANI MAZAR ..	23	70	Cross the railway twice on this stage. Grazing for camels at Ulani Mazar, none for horses. No water obtainable : caravans used to carry a supply from Repetek.
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Ulani Mazar must be close to the railway-station of Peski, which has no water, except what is brought from the Murghab river.

5	UCH AJI, 626' ..	22	92	Cross railway at Peski and re-cross at about 10 miles. Three wells at Uch Aji, all brackish, but the water of 2 of them can be used for cooking purposes. "Abundant" supply. (October 1881). Plenty of fuel and grazing for camels, none for horses. No well at Uch Aji railway-station.
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6	ARMYANIN ..	18	110	At 15 miles pass the railway-station of Ravnina. A well of fresh water at Armanin: yield not stated (1892).
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7	KELGI ..	14	124	At 4½ miles there is a camping-ground, sometimes made stage 6, but it has no water, though there is plenty of fuel and grazing (for camels only). The line is twice crossed before reaching Kelgi. A well of fresh water 2 miles to the south of Kelgi, Beiyur Deshik : yield not stated (1892).
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8	BAIRAM ALI, 780'	25	149	Re-cross to north of railway. Last few miles traverse the ruins of ancient Merv. Bairam Ali is on the edge of the fertile Merv oasis.
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There is a cart-road from here up the right bank of the Murghab river to Yolatan, stage 3 of Route No. 7, a distance of 26½ miles.

9	MERV, 741' ..	18	167	Many bridges over irrigation canals.
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## Route No. 7.

FROM MERV TO CHIHIL DUKHTERAN (CHIL DUKHTER OR CHAHEL DUKHTERAN).

*Authorities and date.*—A. B. C. Routes, 1886. Comte de Cholet, 1887. Russian 40-verst Map, 1892. Sketch of Trans-Caspia, 1892. Turkistan Guide, 1903. W. O. Report, 1905.

*Epitome.*—215 miles, 15 stages. Road suitable for field artillery and wheeled transport, leading to the fortress of Kushk, stage 14, and on to the Afghan Frontier. It runs roughly parallel to the Merv-Kushk (Branch) Railway, up the valleys, first of the River Murghab and then of its tributary, the Kushk. Merv to Kushk by rail is 196 miles, as compared with 201·7 miles by road. As far as Kushk, this used to be a post-road and there were post-houses at each stage. Apparently neither road nor post-houses are kept up, now that the railway has been constructed. Water-supply excellent. The road in stages 1 and 2 traverses the fertile Merv oasis, and in stage 3 the Yolatan and in stage 10 touches the Panjdeh oasis. The two last named are inhabited by 20,000 and 15,000 (estimated) agricultural Sarik Turkomans, respectively. The wheat harvest is only sufficient for local requirements; in bad years wheat has to be imported. The number of sheep in the Panjdeh oasis was put by Colonel Maitland in 1889 at 300,000. At the remaining stages supplies, except grass and fuel, are not obtainable.

The heights noted against stages are those of the railway-stations of the same name.

*Connections:* at Merv, Nos. 11, 12, 19; at Tash Kepri, Nos. 5, 8 and 17; at Haoz-i-Khan, No. 10; at Kushk, No. 18.

There are numerous good camel-roads, used by caravans, over the passes of the Band-i-Baba (Paropamisus or Siah Bubak) to the valley of the Hari-Rud. They are never closed by snow. Important routes are: from Kushk (rail-head) *via* Chihil Dukhteran and the Ardowan Pass (5,250 feet) to Herat 82·3 miles in 7 stages. This is an easy road, practicable for camel transport and stated by a native officer of the Indian Army, who followed it in 1903, to be fit for field artillery. *Vide* Routes in Afghanistan, N.-W., Nos. 17, 18 and 11. Route 24 also connects at Chihil Dukhteran *via* Kara Tapa (a Russian Frontier Guard Post on the Russo-Afghan Frontier 3 miles from Kushk). There are two roads from Kushk to Herat—

(a) *Via* the valley of the Moghor, the Batun pass (4,010 feet) and Parwana, 82 miles in 7 stages. The river Kushk is fordable near Kara Tapa even in flood time. Practicable for field artillery. *Vide* Routes in Afghanistan, N.-W., Nos. 16, 15, stage 1, and 11, stages 2 and 1.

ROUTE No. 7—*contd.*

(b) *Via* the Sar-i-Lar ravine and the Ardewan, or Robat-i-Mirza, *kotals* (both 5,250 feet), 73 miles in 6 stages. This road would require improvement (one day's work by a Company of Sappers and Miners) to render it practicable for field artillery. *Vide* Routes in Afghanistan, N.-W., Nos. 5 and 11, stage 1.

No. of stage.	Names of stages.	DISTANCES.		REMARKS.
		Inter-mediate.	Total.	
1	GEOK TAPA (GEOK TEPE).	11·8	11·8	General direction south-east. Road crosses the Murghab River and traverses the Merv oasis, crossing numerous irrigation canals by bridges.
2	TALKHATAN BABA. (TALKATAN BABA), 804'.	13·3	25·1	Road continues through Merv oasis. Talkhatan Baba is the first station on the railway from Merv. Water from canals.
3	YOLATAN (ELATAN, OR YULATAN), 853'.	13·8	38·9	The village of Yolatan has a population of 250, a hospital of 6 beds, 2 mills and a bazar. The fertile oasis of Yolatan supports 20,000 Turkomans, who grow wheat and cotton. The railway-station is close to the village.
An alternative road from Merv to Yolatan runs <i>via</i> Mirish and Benti, 34·9 miles in 3 stages ; it is a caravan road, practicable for camels, but it is not known whether it is fit for field artillery.				
4	SULTAN BEND (SULTAN BENT OR BAND-I-SULTAN), 891'.	13·3	52·2	The general direction of the road, which runs up the left bank of the River Murghab, is now south. The great dam at Sultan Bend holds up the water of the river, so filling the numerous canals which irrigate the Murghab Imperial Domain.
5	CHAHAR BAGH (CHARVAKH).	13·9	66·1	Road runs through sand-hills. No information available as to the halting-place.
6	CHATLI TAPA (CHATLI TEPE OR CHAPLI TAPA).	14·6	80·7	At about 9½ miles pass Kazakli, where there is a "band" or dam from which the Yolatan canal takes off and

ROUTE No. 7—*contd.*

by which the river can be crossed to a Turkoman village on the right bank. Chatli Tapa lies at a bend of the river.

7	IMAM BABA, (IMAU BABA), 955'.	12·1	92·8	At about 4 miles pass Kalah Burun (Kala Brun), which is sometimes made a halting-place and where grass and water are obtainable. At Imam Baba there is a railway-station and an old military post, now abandoned.
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8	SAR-I-YASI (SAR-I-YAZ), 1,003'.	19·9	112·7	At about 13 miles the road traverses the oasis of Sanduk Kushan, the first of any size met with since leaving Yolatan. There is a good camping-ground in the oasis with grass and water. Sar-i-Yasi railway-station is roughly half-way between Merv and Kushk and has barracks for a portion of the Kushk Railway Company and a hospital of 15 beds. It lies in an oasis, 3 miles long by $1\frac{3}{4}$ miles broad: there is a good camping-ground, but no supplies are obtainable except grass and water.
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9	GINGAGIZ KRI..	13·9	126·6	The road traverses the Aïmakh Jar oasis, $3\frac{1}{2}$ miles by $1\frac{1}{4}$ . At Urus Dushen, at about $9\frac{1}{2}$ miles, there is a guard hut on the railway and a good camping-ground with fuel and, except in winter, good grazing for camels. No information as to Gingagiz Kri.
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10	TASH KEPRI (AK TAPA), 1,063'.	16·6	143·2	At about 6 miles a guard-house and barracks on the railway. At $15\frac{1}{2}$ miles cross the Kushk River, a tributary of the Murghab, by the "Pul-i-Khishti" or "Tash Kupruk." This is an ancient brick bridge carrying the road and a canal across the Kushk. Width of roadway 12 feet. (Report, 1908.) The Kushk runs in a bed, 8 feet to 10 feet deep, and is fordable everywhere, except when in flood. In 1899 there were 4 houses near the railway-station of Tash Kepri, which lies on the edge of the Panjdeh oasis. A caravansari and a hotel for Russians, the latter kept by an Armenian, have since been built. There is a cart-road up the Murghab valley to Takhta Bazar, the most important village in the oasis and to Maruchak (Afghan), <i>vide</i> Route No. 8.
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11	AKCHA KALA (AKSA KALA).	15·3	158·5	The road runs up the valley of the Kushk, generally south-west on stages 11, 12 and 13. The valley is carefully cultivated and many irrigation canals are crossed.
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At Akcha Kala there is a guard-house on the railway and 2 or 3 Russian families were settled here (in 1899).

ROUTE No. 7—*concl'd.*

12	KALA-I-MOR (KALA-I-MAUR), 1,333'.	12·1	170·6	Ruins of a large village and of a fort on the left bank. Room for a camp on the left bank on an open terrace
which extends for 2 miles. Three or four villages are passed on the last half of this stage. There is a railway-station at Kala-i-Mor.				
13	CHAMAN-I-BED (CHEMEN-I-BED).	17·1	187·7	At about 10 miles the camp- ing-ground of Haoz-i-Khan. For camel track from Haoz- i-Khan to the valley of the
Kashan river and Tor Shaikh (Afghanistan), <i>vide</i> Route No. 10. The valley of the Kushk is about 1 mile wide at Chaman-i-Bed. Plenty of grass and fuel. The camping-ground is good in dry weather, but it would be difficult to find a place for a camp in wet.				
14	KUSHK (KUSH- KINSKI POST, KUSHKA OR SHAIKH JU- NAID), 2,060'.	14	201·7	The road and the valley of the Kushk River turn due south. At 10½ miles pass the Russian settlement of Alekseief, 500 inhabitants.
The colonists grow wheat, barley, lucerne, etc., of which they sell a proportion to the garrison. Kushk is the terminus of the Merv-Kushk (Branch) Railway and a fortress of the 3rd class. Its normal garrison is about 4,000.				
15	CHIHIL DUKHTERAN (CHIL DUKHTER OR CHAHIL DUKH- TERAN).	13·3	215	At Chihil Dukhteran there is a Customs House and a Frontier Guard Post con- sisting of 20 men of the Frontier Guard (Shapirof, 1901). It is the most southerly point of the Russian Empire.

## Route No. 8.

FROM TASH KEPRI (AK TAPA) TO MARUCHAK.

*Authorities and date.*—Russian 40-verst Map, 1892. Turkistan and Central Asian Railway Guide, 1903. Major Wanliss, 1903.

*Epitome.*—31·3 miles, 2 stages. A cart-road, 30 feet wide, practicable for field artillery and wheeled transport. It runs up the valley of the River Murghab, traversing the oasis of Panjdeh. A large amount of caravan traffic passes along this road. According to the "Trans-Casian Review" the returns of the Caspian Customs Houses at Takhta Bazar for 1904, give £66,808 worth of imports from Afghanistan (sheep, wool, cotton, pistachio nuts and cattle), and £15,837 value of exports, mainly manufactured goods and cotton.

The ford in stage 2 is impassable when the Murghab is in flood (spring and early summer). Opposite Maruchak are the piers of an

ROUTE No. 8—*concl'd.*

ancient bridge, which could be utilised in the construction of a field bridge. Water-supply excellent. The Panjdeh oasis supports about 15,000 Turkomans: no wheat is, however, exported. Forage and fuel obtainable.

There is a telegraph line to Takhta Bazar from Tash Kepri.

*Connections*: at Tash Kepri, Routes Nos. 5 and 7; at Maruchak, No. 9 and Routes in Afghanistan, N.-W., No. 26.

No. of stage.	Names of stages.	DISTANCES.		REMARKS.
		Inter-mediate.	Total.	
1	TAKHTA BAZAR (Panjdeh).	14·6	14·6	Road up left bank of Murghab River, passing many Turkoman (Sarik) villages. Takhta Bazar has a population of 327 (1900), a bazar, telegraph and post office, Customs House and Frontier Guard Post. Weekly markets are held here and it is the head-quarters of the "Pristaf" of the Panjdeh district.
2	MARUCHAK, 1,140'.	16·7	31·3	At 3 miles cross the Kashan River, which in 1886 was spanned by a rough wooden bridge, with brushwood piers and abutments, capable of carrying field guns. The waterway had been so contracted that there seemed a danger of the bridge being carried away by a sudden flood. A camel-track, passable by guns and wheeled transport for the first 7 miles, leads up the right bank to Robot-i-Kashan, <i>vide</i> Route No. 10, stage 2.—( <i>Peacocke</i> .) At about 12½ miles Route No. 8 connects. At 13 miles ford the Murghab near Tapa Khan, where there is a post of the Frontier Guard, sometimes called Maruchak Post. The Russo-Afghan Boundary pillar No. 36 lies on the right bank, just below the ford. The road now enters Afghan territory. Maruchak is an Afghan fort on the right bank of the Murghab, <i>vide</i> stage 13 of Routes in Afghanistan, N.-W., No. 26.

## Route No. 9.

FROM KUSHK (KUSHKINSKI POST, KUSHKA OR SHAIKH JUNAID) TO TAKHTA BAZAR.

*Authorities and date.*—A. B. C. Routes, 1886. Comte de Cholet, 1887.

*Epitome.*—144½ miles, 5 stages. Distances for first 3 stages approximate only. A difficult camel-track, impracticable for field artillery, with the exception of the last 12½ miles of stage 5, running along

ROUTE No. 9—*contd.*

the Takhta Bazar-Maruchak cart-road, which is suitable for field artillery and wheeled transport. The ford in stage 3 is impassable when the Kashan River is in flood. Water-supply good. No supplies, except fuel and grazing, obtainable until stage 4 is reached, when "small" amounts of grain could be collected from the numerous Turkoman villages in the valley of the Murghab.

*Connections* : at Kushk, Routes Nos. 7 and 18; at stage 2, No. 10; at Maruchak No. 8 and Routes in Afghanistan, N.-W., No. 26.

No. of stage.	Names of stages.	DISTANCES.		REMARKS.
		Inter-mediate.	Total.	
1	CHASHMA CHINGURAK.	33	33	At 3 miles pass Kara Tapa. The road now turns and runs generally south-east. A difficult mountain track, the slopes of the hills being sometimes as steep as 35° to 40°. At about 11 miles cross Russo-Afghan boundary, which is re-crossed at the Chingurak Kotal. Ascent and descent both easy. A good spring, said to be permanent, at Chashma Chingurak. For road from here to Tor Shaikh see "Routes in Afghanistan, N.-W.," No. 24, stages 6 and 7: the road is a camel-track, impracticable for field artillery: distance 34 miles.
2	CAMP ON KASHAN RIVER.	40	73	General direction east. Three difficult passes are crossed. There were some Turkoman tents at the place chosen for de Cholet's camp in 1887. This march took his camels about 17 hours. They were so exhausted that fresh camels were used for the remaining marches. There is a track down the valley of the Kashan to the oasis of Panjdeh, by map 37 miles in a direct line.
3	KARUN KHANA	40	116	Ford the Kashan River, direction then north-east. At about 30 miles a track goes off south-east to Bala Murghab, <i>vide</i> "Routes in Afghanistan, N.-W.," No. 26, stage 11. Karun Khana is a camping-ground on the left bank of the Murghab River, which is crossed by a ford to Karawal Khana, <i>vide</i> stage 12 of "Routes in Afghanistan, N.-W.," No. 26. De Cholet's camels again took 17—18 hours on this stage.
4	KHWAJA ALI (KHOJA ALI).	12	128	Road down left bank of Murghab. The country is well cultivated and many Turkoman villages are passed.



ROUTE No. 9—*concl'd.*

Khwaja Ali is opposite the Afghan fort of Maruchak, *vide* Route No. 8, stage 2.

5	TAKHTA BAZAR (PANJDEH).	16½	144½	At about 4 miles the track joins the cart-road running down the left bank of the Murghab to Takhta Bazar
from Maruchak, <i>vide</i> Route No. 8, stage 2.				

## Route No. 10.

## FROM HAOZ-I-KHAN TO TOR SHAIKH (TORSHEKH).

*Authorities and date.*—Captain Peacocke, 1886. Russian 5-verst Map, 1890. Russian 40-verst Map, 1892.

*Epitome.*—51 miles, 4 stages. An old caravan road, suitable for camel transport, impracticable for field artillery. The ford in stage 2 is impassable, when the Kashan is in flood: no information as to what water is obtainable from the well of Chah-i-Nakash (stage 1), water abundant in remaining stages. No supplies in stage 1 and, in 1886, none at remaining stages, except tamarisk (for fuel) and camel-grazing. The valley of the Kashan, long deserted owing to Turkoman raids, was just beginning in the year mentioned, to attract Sarik cultivators from the Panjdeh oasis. There is a parallel camel-track, impracticable for field artillery, from Kala-i-Mor (a station on the Merv-Kushk Railway), *vide* Route No. 7, stage 12, *viâ* the valley of the river Kashan (crossed by a ford 18 miles below Robat-i-Kashan) to Khwaja Ali and Maruchak (*vide* Routes Nos. 9 and 8).

*Connections:* at HAOZ-I-KHAN No. 7; stage 3 cuts Route No. 9; at Tor Shaikh, "Routes in Afghanistan, N.-W.," Nos. 19 and 24.

No. of stage.	Names of stages.	DISTANCES.		REMARKS.
		Inter-mediate.	Total.	
1	CHAH-I-NAKASH (SHAH NAKASH OR JAI NAKASH).	17	17	General direction east. Road through mountainous country. No information as to Chah-i-Nakash.
2	ROBAT-I-KASHAN	18	35	At about 3½ miles the road enters valley of tributary of the Kashan River and follows it down to the ford

ROUTE No. 10—*concl'd.*

near the old *robat* (caravansarai) which lies on the right bank of the Kashan. The ford is impassable when the river is in flood. It is then necessary to turn up a track, which branches off to the south at a point 1 mile to the west of the ford, runs up the left bank of the Kashan River to the ford at Tor Shaikh (also impassable in flood-time) and on to Kolari (Afghanistan).

There is also a camel-road, of which the last 7 miles are practicable for field guns and wheeled transport, down the right bank to the Panjdeh oasis, connecting with Route No. 8, stage 2.

3	KHAK-I-DAULAT BEG.	10	45	Road up right bank. Four small tributaries are forded on this stage. A tomb and <i>ziarat</i> at Khak-i-Daulat Beg, <i>vide</i> "Routes in Afghanistan, N.-W.," No. 19, stage 9.
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4	TOR SHAIKH (TOR SHEKH).	6	51	For 3 miles through low hills, then road returns to the river valley. Tor Shaikh is an Afghan Frontier Post with a copious spring of water and camping-ground for an infantry brigade.
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## Route No. 11.

## FROM MERV TO SARAKHS.

*Authorities and date.*—Lessar, 1882. Russian 40-verst Map, 1892. Russian Route Map, 1893. French  $\frac{1}{1,000,000}$  Map Merv, 1901.

*Epitome.*—96·7 miles, 5 stages. A desert road, practicable for field artillery and wheeled transport. Water-supply bad; from the last canal in the Merv oasis to Koshut, 73 miles, there is no water that men can drink, but on this stretch water for camels and horses is obtainable at two points, Shigitli and Shor Kala. A Persian Army of 12,000 infantry and 10,000 cavalry marched by this road from Sarakhs to Merv in 1860. They dug over 100 wells 2 miles to the south of Shigitli, but these wells are now dry. No supplies, except fuel and grazing for the first 12 miles of stage 1 and the whole of stage 5. There is a telegraph line—one wire—between Tejen and Sarakhs.

*Connections:* at Merv, Nos 6, 7, 11, 12, 19; at stage 4, No. 13; at Sarakhs, Nos. 14 and 17 and Routes in Persia, Volume I, Nos. 69, 70, 70-A and 71.

ROUTE No. 11—*concl'd.*

No. of stage.	Names of stages.	DISTANCES.		REMARKS.
		Inter-mediate.	Total.	
1	TASH ROBAT (DASHT RABAT).	24·5	24·5	General direction south-west through Merv oasis. At about 12 miles cross a canal from the Murghab river and shortly afterwards enter desert. There is a camel-track from Tash Robat to Jujuklu, a station on the Central Asian Railway. No water at Tash Robat, where there are only the ruins of a large brick <i>serai</i> .
2	WELLS OF SHIGITLI (SHEGITLI, SHENTLI OR SHAHIDLI).	11·6	36·1	The water at Shigitli is brackish, but horses and camels will drink it. Supply abundant. ( <i>Lessar</i> 1882.)
Route No. 12 to Chacha connects here.				
3	SHOR KALA ..	18·6	54·7	Some ruins and 2 wells, the water of which is brackish. Horses and camels will drink it.
Alternative and more westerly track leads from Shigitli to Koshut; is practicable for field artillery and wheeled transport, about 4 miles shorter and absolutely waterless.				
4	KOSHUT ..	32	86·7	At about 6 miles well of Uch-Kuyu (Uch Kui), the water of which is salt. From here a camel-track runs south-south-east to Kaiun Kui Usi, <i>vide</i> Route No. 17, stage 2.
Koshut lies on the right bank of the river Tejen (known in its upper reaches as the Hari Rud), immediately to the south of the ruined fortress of Rukhnabad.				
5	SARAKHS ..	10	96·7	Along Tejen-Sarakhs post-road, <i>vide</i> Route No. 13, stage 4.

## Route No. 12.

## FROM MERV TO CHACHA (PERSIAN).

*Authorities and date.*—Russian Route Map, 1893. Logofet, 1903.

*Epitome.*—114·2 miles, 5 stages. A camel-track, practicable in stages 1 and 2 only for field artillery and wheeled transport. The

ROUTE No. 12—*concl'd.*

ford across the Tejen, stage 4, is impassable in spring and early summer. Water-supply bad; for the first 63 miles the only water is at Shigitli, and this is not fit for human consumption. No supplies in first 3 stages, except fuel and grazing at Kangali.

*Connections* : at Merv Routes, Nos. 6, 7 and 11, 12, 19 ; at stage 3 cuts Route No. 13 (Tejen to Sarakhs post-road) ; at stage 4 Route ; at Chacha, Routes in Persia, Volume I, No. 69.

No. of stage.	Names of stages.	DISTANCES.		REMARKS.
		Inter-mediate.	Total.	
1	TASH ROBAT (DASHT RABAT).	24·5	24·5	First 12 miles through Merv oasis, then across desert. No water at Tash Robot, <i>vide</i> Route No. 11, stage 1.
2	WELLS OF SHIGITLI (SHEGITLI, SHENTLI OR SHAHIDLI).	11·6	36·1	Brackish water at Shigitli, drinkable by camels and horses, <i>vide</i> Route No. 11, which runs south-south-west from here to Sarakhs.
3	KANGALI ..	39·1	75·2	At 26 miles a camel-track to Meana, <i>vide</i> Route 20, stage 2. At Kangali the road crosses the river Tejen by a ford and cuts Route No. 13, the post-road from Tejen to Sarakhs, which runs along the right bank of the river. Its bed is here 200 yards wide.
4	CHACHA (KARA CHACHA, RUSSIAN CHACHA OR LOWER CHACHA).	23·2	98·4	A "large" Turkoman village on the road from Dushak to Sarakhs, <i>vide</i> Route No. 20, stage 3. The inhabitants grow wheat and rice. Water "plentiful" from stream.
5	CHACHA (PERSIAN).	15·8	114·2	At 4 miles pass the Russian Frontier Guard Post and Customs House of Chacha. A considerable caravan traffic between Meshed and Dushak (a station on the Central Asian Railway) passes through this post. Road then enters Persian territory. For Persian Chacha, <i>vide</i> Routes in Persia, Part I, Route No. 69, stage 2.

## Route No. 13.

FROM TEJEN (TEJEND) TO SARAKHS.

*Authorities and date.*—Russian 40-verst Map, 1892. French  $\frac{1}{1,000,000}$  Map of Merv, 1901. Russian Postal Guide, 1906.

*Epitome.*—81·9 miles, 4 stages. An unmetalled post-road, suitable for field artillery and wheeled transport. The road runs up the right bank of the river Tejen (Hari Rud). 7 horses are kept at each stage. In March 1907 the road was impassable, owing to rain and snow. Water-supply, December to June, good, as the River Tejen (Hari Rud) is full. In July it dries up, but wells sunk to a depth of 15 feet to 20 feet in the bed of the river always yield fresh water. The Turkomans find sufficient for large herds in this way. (*Central Asian Railway Guide*, 1903.) No supplies except fuel and grazing.

The cart-road continues up the right bank of the Tejen as far as Pul-i-Khatun, *vide* Route No. 14. Total distance, Tejen to Pul-i-Khatun, 129·2 miles, 8 stages. There is also a cart-road from Sarakhs to the Russian village of Krestovi, which lies  $6\frac{1}{2}$  miles to the south-east of Sarakhs.

*Connections:* at Tejen No. 19; at stage 2 cuts Route No. 12 at Sarakhs Nos. 11, 14, 17 and Routes in Persia, Volume I, Nos. 69, 70, 70-A and 71.

No. of stage.	Names of stages.	DISTANCES.		REMARKS.
		Inter-mediate.	Total.	
1	KARI BAND (KARRI BEND).	20	20	From the railway station of Tejen to the post-office is 1 mile; the road then turns south-east, crosses the
railway and runs up the right bank of the Tejen river.				
2	PEREPRAVA ..	20·6	40·6	Pereprava means, in Russian "a crossing." The post-house is probably situated at the ford of Kangali, <i>vide</i>
Route No. 12, stage 3.				
3	KAUSHUT ..	23·0	63·6	Pass the ford of Kuschi on this stage (Kushchi = falconer in Turki).
4	SARAKHS ..	18·3	81·9	At 10 miles pass the ruined fortress of Rukhnabad, which is to the east of the road.

ROUTE No. 13—*concl'd.*

Russian Sarakhs lies on the right bank of the Tejen river, population 1,900 (1904); normal garrison, one battalion.

Persian Sarakhs lies  $2\frac{1}{4}$  miles to the west on the left bank of the river Tejen (Hari Rud). The bed of the river, 800 yards wide, is dry in late summer and autumn, but in flood-time it becomes an impassable torrent.

## Route No. 14.

## FROM SARAKHS TO PUL-I-KHATUN.

*Authorities and date.*—Major Maitland and Captain Peacocke, 1885. Russian 40-verst Map, 1892. Napier, 1894.

*Epitome.*—47·3 miles, 4 stages. A cart-road, practicable for field artillery and wheeled transport. Good water-supply from the river Tejen (Hari Rud) and canals. Cultivation in stage 1; in remaining stages the right, or Russian, bank is barren, and the villages on the left, or Persian, bank are poor and would yield few supplies. Fuel and grazing obtainable.

In fine weather heliographic communication has been maintained since 1907 at least, between Sarakhs and Pul-i-Khatun.

*Connections:* at Sarakhs, Routes Nos. 13, 16, 17 and Routes in Persia, Volume I, Nos. 69, 70, 70-A, and 71; at Pul-i-Khatun, Route No. 15 and Routes in Persia, Volume I, Nos. 36, 37, 38 and 71. Pul-i-Khatun to Meshed by the last named route is 98 miles in 5 stages.

No. of stage.	Names of stages.	DISTANCES.		REMARKS.
		Inter-mediate.	Total.	
1	DAULATABAD ..	14	14	Road by right bank of the Tejen through country cultivated by Salor Turkomans. At Daulatabad is the dam, from which the canals irrigating the country round Sarakhs take off. It has a Russian Frontier Guard Post of 15 men and 5 "jiggits" (mounted native messengers).
2	NAUROZABAD (OLD NAUROZ- ABAD).	9·3	23·3	At 8 miles a ford leading to Persian (New) Naurozabad. At Old Naurozabad there is a Frontier Guard of 15 men and 5 "jiggits." Route No. 16, to Ak Robot, connects here.

ROUTE No. 14—*concl'd.*

3	SHIR TAPA (SHOR TAPA OR SHER TAPA).	12	35·3	The road winds among the low hills on the right bank of the Hari Rud. There is a fort at Shir Tapa, and a Frontier Guard Post of 15 men and 5 "jiggits."
4	PUL-I-KHATUN 1,580'.	12	*47·3	Road through barren country. Pul-i-Khatun has a Frontier Guard Post of 25 men. In March 1908 there were also 80 Cossacks. Pul-i-Khatun lies at the junction of the Hari Rud and the Kashuf Rud. There is a stone bridge across the Hari Rud, passable for all arms.

## Route No. 15.

FROM PUL-I-KHATUN TO ZYULFIKAR (ZULFIKAR).

*Authorities and date.*—Logofet, 1903. Captain Smyth (from native information), 1906.

*Epitome.*—50 miles, 3 stages. Suitable for camels, impracticable for field artillery and wheeled transport. Water-supply poor. It is used by caravans going to Herat. No supplies, except a little grazing and fuel, obtainable.

Above Pul-i-Khatun the hills run down precipitously to the right bank of the Hari Rud (Tejen); a track runs directly up the gorge to Zyulfikar, a distance of 36 miles.

*Connections:* at Pul-i-Khatun, Route No. 14 and Routes in Persia, Volume I, Nos. 36, 37, 38 and 71; at Zyulfikar, Route No. 18 and Routes in Persia, Volume I, Nos. 39, 40, 41, and 42. "Routes in Afghanistan, N.-W.," No. 6, connects near stage 1 and No. 5 at Zyulfikar. By the latter from Sarakhs to Herat *via* Zyulfikar, the Nihalasheni pass (3,300 feet) and Kuhsan is 238·3 miles in 16 stages, or about 227 miles in 15 stages, if the road direct from Chakmakli to Karez Elias (*vide* "Routes in Afghanistan, N.-W.," No. 6, stage 4) be taken.

No. of stage.	Names of stages.	DISTANCES.		REMARKS.
		Inter-mediate.	Total.	
1	AGAR CHASHMA (AGHA CHASHMA OR AKAR CHASH- MEH), 1,700'.	25	25	Road leaves the Hari Rud and runs south-west through the hills on the right bank. Pass the

\* Captain Smyth in 1909 estimated the distance from Sarakhs to Pul-i-Khatun to be about 46 miles by either bank of the Hari Rud.

ROUTE No. 15—*concl'd.*

Frontier Guard Post (15 men and 5 "jiggits") of Garmab. Another post of the same strength at Agar Chashmeh. The well yields fresh water. In March 1885 it yielded only 2 gallons an hour. Good camping-ground. Fuel "abundant."—(Maitland and Peacocke.)

2	CHAKMAKLI (CHEKMAKLI CHENGA OR DEHANEH-I-ZUL- FIKAR.)	13	38	Road through the Nardivan Pass. There is a post of the Russian Frontier Guard at Chakmakli, <i>vide</i> Route 18, stage 1.
3	ZYULFIKAR (ZULFIKAR), 1,900'.	12		

a post of Afghan Irregulars. The Russian, Persian and Afghan Frontiers meet at point on the right bank of the Tejen (Hari Rud), 1 mile north of Zyulfikar.

## Route No. 16.

FROM SARAKHS TO AK ROBAT.

*Authorities and date.*—Maitland and Peacocke, 1885. Russian 40-verst Map, 1892. Logofet, 1903.

*Epitome.*—86·8 miles, 6 stages. A camel-road, practicable for field artillery, which could easily be made fit for wheeled transport. Water-supply good in stages 1 and 2, bad in remainder. Supplies not obtainable, except fuel and grazing for camels. At stage 6, even fuel is unobtainable.

*Connections:* at Sarakhs, Nos. 11, 13, 14 and Routes in Persia, Volume I, Nos. 69, 70, 70-A and 71; at stage 2, Route No. 14; at Ak Robat, No. 18 (Zyulfikar to Kushk). Sarakhs to Herat *via* Ak Robat and the Afzal Pass (4,750 feet) is 186·3 miles in 16 stages. Could easily be made practicable for field artillery throughout. "Routes in Afghanistan, N.-W.," No. 15 and No. 11, stages 2 and 1; No. 9 also connects at Ak Robat.

No. of stage.	Names of stages.	DISTANCES.		REMARKS.
		Inter-mediate.	Total.	
1	DAULATABAD ..	14	14	For first 2 stages, <i>vide</i> Route No. 14, the cart-road from Sarakhs to Pul-i-Khatun. A Frontier Guard Post of 15 men and 5 "jiggits" (native mounted messengers) at Daulatabad.

\* Captain Smyth in 1909 estimated the distance from Pul-i-Khatun to Zulfikar to be about 45 miles.



ROUTE No. 16—*concl'd.*

2	NAUROZABAD (OLD NAUROZ- ABAD).	9·3	23·3	Another post, of the same strength, at Naurozabad.
3	KAREZAK (KERIZ)	21	44·3	Road leaves the cart-road and the valley of the River Hari Rud (Tejen) and runs south-east over undulating downs. In March 1885 the water at Karezak was bitter and only fit for horses and cattle. Fuel and camel-grazing "abundant." No supplies.
4	ADAM ULAN ..	8	52·3	Road over plain. Ruins of a <i>robat</i> at Adam Ulan. In March 1885 there were 3 wells with 5 feet of drinkable water in each. Natives say that the water becomes brackish in the hot weather. Lessar found it sweet in May.
5	KANGRUALI ..	15	67·3	At 10 miles pass Agar Chashma, <i>vide</i> Route No. 15, stage 1, where there is a Frontier Guard Post of 25 men and 5 "jiggits." At Kangruali an old <i>robat</i> and 3 wells. If cleared they would probably supply sufficient water for a considerable body of men. ( <i>Maitland and Peacocke, 1885.</i> ) Two wells. The Russian map of 1892 marks both as filled up. There is a camel-track from Kangruali to Karez Elias (Afghanistan).
6	AK ROBAT	10·5	86·8	At about 6 miles pass a great depression encrusted with salt ( <i>nimaksar</i> ) called Yar Oilan. There is a camel-track from here to Hazrat Imam near Kala Burun on the Murghab ( <i>vide</i> Route No. 7, stage 7), which the Turkomans use. They collect salt from the <i>nimaksar</i> and the road is called the Yolatan salt road. Water-supply very bad. The watershed between the Hari Rud and Murghab basins is crossed on this stage. At Ak Robot a Frontier Guard Post, apparently of some size, as it is a Lieutenant's command. Surroundings bare desert. Good camping-ground for 10,000 men: a little fuel, camel-grazing "fairly abundant." Logofet (1903) says there are 36 wells, but that their water is bitter and only drinkable by the sheep, of which the neighbouring Turkomans keep enormous flocks. He does not say from where the garrison gets its water. Earlier reports describe the water as good.

There is a camel-track from Ak Robot north to Kaiun-Kui-Usi, stage 2 of Route No. 17, the caravan road from Sarakhs to Tash Kepri.

## Route No. 17.

FROM SARAKHS TO TASH KEPRI (AK TAPA).

*Authorities and date.*—Maitland and Peacocke, 1885,  
Russian 40-verst Map, 1892.

*Epitome.*—102½ miles, 7 stages. A camel-track, which probably offers no great obstacles to the passage of field artillery. Water-supply poor and supplies not obtainable except grazing and fuel, which are to be found on all but Nos. 4 and 5 stages.

This road is much used by Afghan caravans proceeding to Meshed from Maruchak.

*Connections :* at Tash Kepri Routes Nos. 5, 7 and 8 ; at Sarakhs Nos. 13, 14 and 16 and Routes in Persia, Volume I, Nos. 69, 70, 70-A and 71.

No. of stage.	Names of stages.	DISTANCES.		REMARKS.
		Inter-mediate.	Total.	
1	KHUM GUZAR	12	12	General direction south-west Water ("abundant" in 1885) from pits in old flood-bed of the River Tejen
(Hari Rud).				
2	KAIUN-KUI-USI (KUYUN KUYU).	24	36	Five wells at Kaiun-Kui-Usi, "plenty" of water. Fuel and grazing obtainable.
3	KIRISH BASHAJI (BESH OZI).	15	51	Nine wells at Kirish Bashaji, February 1885 ; of these 8 were filled in. The 9th hardly gave enough water
for a ½ squadron. All the wells and grazing obtainable.				could be cleared out easily. Fuel
4	GUMBAZLI ..	8½	59½	There are 9 or 10 wells at Gumbazli, which in February 1885 were all more or less filled up.

ROUTE No. 17—*concl'd.*

5	CAMP IN DESERT	14½	74	Nothing was obtainable at this halting-place in February 1885. No well.
6	KHALUN-UNG KOROGI (KHALIM KUYU).	12½	86½	A well in 1892; yield and quality of water unknown.
7	TASH KEPRI (AK TAPA).	16	102½	Road through soft sandy soil. Cross the river Kushk by the Pul-i-Khishti, <i>vide</i> Route No. 7, stage 10.

## Route No. 18.

FROM ZYULFIKAR (ZULFIKAR) TO KUSHK (KUSHKINSKI POST OR SHAIKH JUNAID).

*Authority and date.*—Peacocke, 1884. De Cholet, 1887. Russian 40-verst Map, 1892. Logofet, 1903.

*Epitome.*—73 miles, 5 stages. Road practicable for field artillery and wheeled transport. In spring marshes form in the Zyulfikar defile, stage 1, which is then difficult going. This road affords lateral communication between the valleys of the Tejen (Hari Rud) and Murghab, *vide* Routes Nos. 13, 14 and 15 (Tejen to Zyulfikar) and 7 (Merv to Kushk and Chihil (Chahel) Dukhteran). Water-supply bad. No supplies, except grazing for camels. Fuel very scarce.

*Connections:* at Zyulfikar, Route No. 15, Routes in Persia, Volume I, Nos. 39, 40, 41 and 42, "Routes in Afghanistan, N.-W.," Nos. 5 and 6; at Ak Robot, Route No. 16 and "Routes in Afghanistan, N.-W.," Nos. 7 and 23; at Kushk, Route No. 7.

No. of stage.	Names of stages.	DISTANCES.		REMARKS.
		Intermediate.	Total.	
1	CHAKMAKLI (CHEKMAKL CHENGA OR DEHANEH-I-ZULFIKAR).	12	12	Road through the defile of Zyulfikar. There are a few springs of fresh water in the pass. At the eastern end of the defile reach the

point where the route to Karez Elias (Afghanistan) branches off, *vide* "Routes in Afghanistan, N.-W.," No. 6. At 112 miles cross the Russo-Afghan frontier and reach the Russian Frontier Guard Post

ROUTE No. 18—*concl'd.*

strength : 1 Commander, 17 Mounted Frontier Guard, 2 Turkoman Sowars) of Chakmakli. The post lies under a curious conical-shaped hill, which is a good land-mark. There is a post of Afghan Irregulars, about 300 yards from the Russian post. The nomads find grazing for their sheep on the surrounding steppe. There are some wells, yield unknown, in a ravine north-west of the Chakmakli hill.

2	AK ROBAT ..	16	28	Road over barren steppe rising to the plateau, in the centre of which stands the Russian Frontier Guard
				Post of Ak Robot, <i>vide</i> Route No. 16, stage 6.

3	AO RAHAK (CHOKAN SHOR).	17	45	Road leaves the plateau and enters Afghan territory. In 1903 all the boundary posts had been destroyed by the nomads, who used them for fuel. Ao Rahak is on the Egri Geok stream. Camels and sheep will drink its water, but not horses. Tamarisk jungle for fuel, <i>vide</i> "Routes in Afghanistan, N.-W.," No. 7, stage 5.]
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4	CHASHMA-I-ISLIM (ISLIM CHASHMEH).	12	57	The road follows the Egri Geok stream down to Chashma-i-Islim, where there is a Russian Frontier Guard Post. Water-supply, from wells and stream, good camel-grazing obtainable, but no wood for fuel, <i>vide</i> "Routes in Afghanistan, N.-W.," No. 7, stage 6.
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5	KUSHK (KUSHKINSKI POST OR SHAIKH JUNAID) 2,060'.	16	73	A Frontier Guard Post is passed on this stage (name unknown), established to maintain communication between Chashma-i-Islim and Kushk. At 6½ miles the road ascends a ridge by zig-zags and then descends to the valley of the River Kushk, passing the quarries from which the stone, used in building the fortress, was taken, <i>vide</i> Route No. 7, stage 14.
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## Route No. 19.

FROM MERV TO DUSHAK (DOSHAH).

*Authorities and date.*—French map  $\frac{1}{1,000,000}$ . 1901. Central Asian Railway Guide, 1903. War Office Report, 1905.

*Epitome.*—116 miles, 7 stages. The distance by the Central Asian Railway, to which the road is roughly parallel, is 107·4 miles. A cart-road, practicable for field artillery and wheeled transport,

ROUTE No. 19—*contd.*

except sometimes in spring when the River Tejen (Hari Rud) overflows its banks and renders stage 5 impassable. Water-supply bad ; all the railway stations, except Tejen have to obtain their drinking water by rail. No supplies, except fuel and grazing, obtainable, except at Tejen (Kari Band or Karri Bent), which is the centre of a fertile oasis, and in the country round Dushak, which is thickly inhabited and produces wheat and cotton. The Turkomans also rear cattle.

*Connections* : at Merv, Nos. 6, 7, 11 and 45 ; at Tejen, No. 13 ; and at Dushak, Nos. 20, 21, 22, and 25.

No. of stage.	Names of stages.	DISTANCES.		REMARKS.
		Inter-mediate.	Total.	
1	KARA BATA (KARBI BATA).	16	16	Road runs on the north of the railway and roughly parallel to it. Drinking water is brought by train
from Merv, but water for locomotives is obtained from canals. Many Turkoman villages in the vicinity of Kara Bata, which is on the western edge of the Merv oasis.				
2	DORT KUIU ..	15½	31½	At about 11 miles pass the well of Kulubai, yield unknown. Dort Kuiu gets its drinking water by train
and "abundant" fuel from bushes in the old bed of the river Murghab : there is a store of "saxual" at the railway station.				
3	JUJUKLU ..	20	51½	At 7 miles pass the 2 wells of Dort Kuiu, yield not known. Drinking water brought from Tejen by rail.
There is a camel-track from here to Tash Robot, <i>vide</i> Route 12, stage 1.				
4	GEOK SUR ..	19½	71	Near the railway station of Geok Sur lies the tumulus of the same name. Drinking water by rail.
5	TEJEN ..	14	85	The desert on this stage is only 3½ feet above the level of the banks of the Tejen ; it is often flooded in spring.

Camping-ground (size not known) on the right bank of the Tejen. The village of the same name has 200 inhabitants, a church, shops and hospital of 5 beds. The Turkomans who inhabit the Tejen Oasis grow cotton and wheat and rear cattle. Water from the river and wells.

ROUTE No. 19—*concl'd.*

6	TAKIR ..	19	104	Cross the Tejen (Hari Rud) by the railway bridge which carries a roadway as well as the line, and then cross the railway to the west of Tejen station. From this point the road runs to the south of, and roughly parallel to, the line. At Takir railway station all water is brought by rail. There is a large salt marsh, called Shor Bogin, to the south.
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7	DUSHAK ..	12	116	A village with 200 inhabitants. Drinking water all brought by rail, other water from the brackish Chardeh stream.
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Dushak is the railway station on the Central Asian line nearest to Meshed, the road to which strikes off from Route No. 20 at Chacha, stage 3. There is a 2nd class customs station at Dushak, through which 1,000 tons of goods pass, on an average, per year.

## Route No. 20.

## FROM DUSHAK (DOSHAK) TO SARAKHS.

*Authorities and date.*—Lessar, 1892. Russian 40 verst Map, 1892. French Map  $\frac{1}{1,000,000}$ , 1901. Logofet, 1903.

*Epitome.*—90.6 miles, 5 stages. Practicable for field artillery and wheeled transport. The Tejen (Hari Rud), stage 5, is difficult to cross in spring. Water-supply bad. No supplies, except fuel and grazing for camels.

For Dushak, *vide* Route No. 19, stage 7.

*Connections:* at Dushak, Nos. 19, 21, 22 and 25; at Chacha, No. 12; at Rukhnabad, Nos. 11 and 13; and at Sarakhs, Nos. 14 and 17 and Routes in Persia, Volume I, Nos. 69, 70, 70-A and 71.

No. of stage.	Names of stages.	DISTANCES.		REMARKS.
		Inter-mediate.	Total.	
1	SARMANSA ..	15	15	General direction of road south over waterless and sparsely inhabited country. At 11 miles pass the village of Firman. No information regarding water or supplies at Sarmansa.
2	MEANA .. (MEHNA)	16	31	Road continues through barren country. The village of Tharli is passed. At about 9 miles the cultivation of

ROUTE No. 20—*concl'd.*

Meana commences. Near the Turkoman village of Meana lies the Russian Frontier Guard Post of the same name (strength: 10 Mounted Frontier Guard, 10 Infantry Frontier Guard, 5 Turkoman sowars). Water from a stream.

3	CHACHA (KARA CHACHA, RUS- SIAN CHACHA OR LOWER CHACHA).	12	43	Road through waterless desert. For Chacha, <i>vide</i> Route No. 12, stage 4. The road to Persian Chacha
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runs south-west, passing the Russian Frontier Guard Post (strength unknown) of the same name, *vide* Route No. 12, stage 4.

4	KALHAUZ ..	15.5	58.5	Road through waterless country. At Kalhauz there is a pool in which Logofet found water in the middle of June. It was nasty, but drinkable. In spring the nomads bring their flocks of sheep to graze near Kalhauz.
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5	RUKHABAD ..	22.1	80.6	Pass the Russian Frontier Guard Post of Yasi Tapa (strength unknown). Water from a spring drinkable, but said to cause "Panjdeh sores." A road, practicable for carts, branches off at about 12 miles to Persian Sarakhs. The Russian road turns west at this point, crosses the bed of the Tejen (Hari Rud) and joins the Tejen-Sarakhs post-road at Rukhnabad, a ruined Persian fortress. Water from the Tejen; no supplies, except fuel and camel-grazing.
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6	SARAKHS ..	10	90.6	By post-road down right bank of Tejen (Hari Rud) to Russian Sarakhs, <i>vide</i> Route No. 13. The Per- sian Telegraph Line—1 wire—from Meshed joins the Russian Line from Tejen at Sarakhs.
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## Route No. 21.

FROM DUSHAK (DOSHAK) TO KARATAGAN.

*Authorities and date.*—Oranovski, 1894. Tanner, 1906.

*Epitome.*—33.2 miles, 2 stages. A camel-road, but could, apparently, be made practicable for field artillery if widened in the Haji Bulan gorge. No water, except at Darband Haji Bulan, and no supplies except fuel and some scanty grazing at the same place.

For the whole road from Dushak to Meshed *via* Karatagan, 102 miles in 6 stages, *vide* Routes in Persia, Volume I, No. 68.

*Connections:* at Dushak, Nos. 19, 20, 22 and 25.

ROUTE No. 21—*concl'd.*

No. of stage.	Names of stages.	DISTANCES.		REMARKS.
		Inter-mediate.	Total.	
1	DARBAND HAJI BULAN.	20·2	20·2	General direction south. Over plain for 15 miles, then along foot of low hills. No supplies, water or grazing <i>en route</i> . There is a spring (yield unknown), fuel and grazing at Darband Haji Bulan.
2	KARATAGAN ..	13	33·2*	General direction south-south-east. The gorge of Haji Bulan is very narrow and bounded by low rocky hills. The road here is also very narrow and requires to be widened for a distance of 300 yards to be practicable for field artillery. After the gorge to Persian village of Karatagan.

## Route No. 22.

FROM DUSHAK (DOSHAH) TO KALAT-I-NADIRI (KELAT-I-NADIRI).

*Authorities and date.*—French Map  $\frac{1}{1,000,000}$ , 1901. Gazetteer of Persia, 1908.

*Epitome.*—25 miles, 1 stage. Road practicable for camel-transport and field artillery, except in flood-time, when the Darband-i-Nafteh (Darband-i-Nafta) is impassable.

*Connections:* at Dushak, Nos. 19, 20, 21 and 25; and at Kalat-i-Nadiri, Routes in Persia, Volume I, Nos. 63, 64, 67 and 69.

No. of stage.	Names of stages.	DISTANCES.		REMARKS.
		Inter-mediate.	Total.	
1	KALAT-I-NADIRI (KELAT-I-NADIRI).	25	25	The Askhabad cart-road is followed as far as the village of Chardeh, after which the road ascends the defile of Nafteh (Nafta), in which a stream flows. At about 14 miles the Russo-Persian Frontier is crossed near Khwaja Chashma. At 18 miles enter the Darband-i-Nafteh, a gorge which is defended by a loopholed wall and leads up to the great natural fortress of Kalat-i-Nadiri.

\* Captain Smyth in 1909 stated the distance from Doshak to Karatagan was only about 30 miles.



## Route No. 23.

FROM KAAKHKA (KAAKA KALA) TO KHAKISTAR.

*Authorities and date.*—Oranovski, 1894. Watson, 1905.  
Tanner, 1906.

*Epitome.*—21 miles, 1 stage. Suitable for mule transport and impracticable for field artillery. Water-supply good. No supplies *en route*. For Kaakhka to Meshed, *vide* Routes in Persia, Volume I, No. 65, 90 miles in 5 stages. This is the shortest route from any station on the Central Asian Railway to Meshed, and Oranovski considers that it might be used by a small detachment of cavalry and infantry, making a dash on Meshed over the mountains.

*Connections* : at Kaakha, No. 25.

No. of stage.	Names of stages.	DISTANCES.		REMARKS.
		Inter-mediate.	Total.	
1	KHAKISTAR ..	21	21	General direction south-west. The road rises gradually to Sang-i-Diwar (11 miles), a Russian Frontier Guard Post of about 20 men. Then up a broad valley for 5 miles, and next up a river-bed in a narrow gorge for 4 miles to Khakistar, a Persian village and Customs House.

## Route No. 24.

FROM ASHKABAD TO KALTA CHINAR (PERSIAN).

*Authorities and date.*—French Map  $\frac{1}{1,000,000}$ , 1901.  
Logofet, 1903.

*Epitome.*—22 miles, 1 stage. A cart-road, suitable for wheeled transport and field artillery.

*Connections* : at Ashkabad, Nos. 25, 27, 28, 29, 34 and 44 ; and at Kalta Chinार, No. 26.

No. of stage.	Names of stages.	DISTANCES.		REMARKS.
		Inter-mediate.	Total.	
1	KALTA CHINAR	22	22	General direction south-east. Road at first over plain, then enters the foot-hills of the Kopet Dagh. At 16

ROUTE No. 24—*concl'd.*

miles it passes the Russian Frontier Guard Post of Kalta Chinar, consisting of 1 officer, 3 officials, 4 Frontier Guard Infantry, 10 Frontier Guard Cavalry. There are several villages of Russian settlers along the Kalta Chinar stream.

The Frontier Guard Post gets its supplies from Persian Kalta Chinar, which lies about  $1\frac{1}{2}$  miles south of the Russo-Persian Frontier.

## Route No. 25.

FROM ASHKABAD TO DUSHAK (DOSHAK).

*Authorities and date.*—French Map  $\frac{1}{1,000,000}$ , 1901. Turkistan Guide, 1903. Logofet, 1903.

*Epitome.*—109·3 miles, 8 stages. By the Central Asian Railway, to which the road is roughly parallel, the distance is 106·1 miles. Practicable for wheeled transport and field artillery. In spring, when the mountain streams are in flood, the going would be difficult, especially on stage 4. Water for animals from irrigation canals; good drinking water is rather scarce, and is supplied to many of the railway stations by train. The road traverses the rich country lying at the foot of the Kopet Dagh mountains. The inhabitants, Tekke-Turkomans, grow wheat and cotton and rear cattle. Supplies are also obtainable from the Persian villages, *e.g.*, Lutfabad (*vide* stage 5).

*Connections* : at Ashkabad, Nos. 24, 27, 28, 29, 34 and 44; at Kaakha; No. 23; and at Dushak, Nos. 19, 20, 21 and 22.

No. of stage.	Names of stages.	DISTANCES.		REMARKS.
		Inter-mediate.	Total.	
1	GYAURS (GIA-URS).	20	20	The road runs south of the railway and roughly parallel to it. At 6 miles pass the crossing station and village of Anau. Gyaurs is a Tekke-Turkoman village on the western edge of the Atek oasis which extends the whole way from here to Dushak. The water from the canals has a brackish taste. Drinking water for the railway station of Gyaurs is brought by train.
2	AKHSU (AKSU)..	15	35	The water at the railway station of Akhsu is brought by rail. The Frontier Guard Post of the same name lies some $6\frac{1}{2}$ miles to the south, <i>vide</i> Route No. 26, stage 3.

ROUTE No. 25—*concl'd.*

3	BABA DURMAZ	9·3	44·3	Baba Durmaz is a "small" village, and the country in the vicinity is thinly inhabited. Water for railway station by rail.
4	ARTIK ..	12	56·3	There are numerous villages near Artik, which has a Frontier Guard Post of 16 Mounted Frontier Guard, 6 Dismounted Frontier Guard, 5 other Russians, 4 Turkoman sowers, and a 3rd class Customs House, through which there is a caravan trade with Persia. When the mountain streams are in flood, the land near the railway station of Artik is sometimes under water.
5	KAUSHUT ..	10	66·3	At 3 miles pass the Persian village of Lutfabad (pop. 500 families). Here the Russo-Persian Frontier is within 2 miles of the Central Asian Railway. At 10 miles the road crosses the railway. There is a Frontier Guard Post (strength unknown) at Kaushut. Though there are numerous canals, drinking water for the railway station is brought by rail.
6	KAARKHA (KAARKA KALA OR KAARKHA).	13	79·3	At 5 miles the road crosses the railway and runs to the south of it again. Kaarkha has a population of 400, a hotel, Customs House and railway workshops and store-houses. Water from <i>karezes</i> .
7	ARMAN SAGAT..	12	91·3	The railway station, for which drinking water is brought by train, is called Arman Sagat, but the name of the Turkoman village, lying close to the south, is Khwaja Mahmud.
8	DUSHAK (DOSHAK).	18	109·3	At 12 miles pass village of Chardeh, where the road turns north-east to Dushak. For Dushak, <i>vide</i> Route 19, stage 7.

## Route No. 26.

FROM GAUDAN (BAJGIRAN-I-URUS) TO AKHSU (AK SU).

*Authorities and date.*—French Map  $\frac{1}{1,000,000}$ , 1901. Logofet, 1903.

*Epitome.*—55 miles, 3 stages. Distances approximate only. A mountain track practicable for mule transport and mountain artillery only.

ROUTE No. 26—*concl'd.*

The stream in stage 2 would be difficult to ford in spring. Water-supply good in stages 1 and 2; bad in 3. No supplies, except good grazing and fuel in stages 1 and 2. Stage 3 lies through desert country.

*Connections*: at Gaudan, Nos. 27 and 30; and at Kalta Chinar, No. 24.

No. of stage.	Names of stages.	DISTANCES.		REMARKS.
		Inter-mediate.	Total.	
1	KALTA CHINAR	15	15	The road is a mere bridle path over the mountain. For the Russian Frontier Guard Post of Kalta Chinar,
<i>vide</i> Route No. 24, stage 1.				
2	SHAMLI ..	15	30	Cross the Kalta Chinar stream, which is subject to floods in spring. Road through valleys in which the
Turkomans find pasture for their sheep. Shamli is a village, with a Frontier Guard Post of unknown strength. Good water from a spring and excellent grazing for horses.				
3	AKHSU (AK SU)	25	55	A bad road through barren mountainous country. At about 8½ miles pass Khwaja (Khoja), a Frontier Guard
Post of unknown strength, which, like Akhsu (another Frontier Guard Post reached at 18½ miles), has a small spring of brackish and most unpleasant water. The railway station of Akhsu (Ak Su) lies about 6½ miles to the north, <i>vide</i> Route No. 25, stage 2.				

## Route No. 27.

FROM ASHKABAD TO BAJGIRAN (BAGJIRHA OR PERSIAN BAJGIRAN).

*Authorities and date.*—Routes in Persia, Volume I, 1908. Russian Postal Guide, 1908.

*Epitome.*—30·2 miles, 2 stages. Practicable for wheeled transport and field artillery at all seasons. Water-supply poor. No supplies.

These are the first two stages of the Ashkabad-Meshed cart-road. As they lie in Russian territory to within a short distance of Bajgiran-i-Iran, they are better kept up than the Persian portion of the road, *vide* Routes in Persia, Volume I, No. 48.

ROUTE No. 27—*contd.*

A large amount of traffic (*fourgons*, or large four-wheeled carts, camels and donkeys) passes along the road, which is the main line of communication between Russian territory and Khorasan. In 1899 caravans amounting to more than 36,000 camels and 25,000 donkeys entered Ashkabad, bringing raw cotton, dried fruits, wool, etc. Cattle are also imported into Trans-Caspia from Persia, to which the exports are mainly petroleum, sugar, cotton, tissues and tea. The latter, which is largely Indian, comes *viá* Batum.

*Connections* : at Ashkabad, Nos. 24, 25, 28, 29, 34 and 44 ; at Gaudan, Nos. 27 and 30 ; and at Bajgiran, Routes in Persia, Volume I, Nos. 50 and 63.

An epitome of the whole road from Ashkabad to Meshed is given for convenience of reference. Distance 177·2 miles in 13 stages, which may be divided into two sections:—

- (1) Ashkabad to Kuchan, 79·2 miles. A graded cart road which crosses five ranges of hills and two rivers, the Durungar and the Atrek, both fordable. The road has been neglected and in winter and spring is difficult, but never impassable.
- (2) Kuchan to Meshed, 98 miles. Road practically level clay, soil free from stones. Most of the culverts have fallen in, but it is always possible to make *détours*. In dry weather the road is a foot deep in dust, and in wet becomes a sea of mud.

*Water-supply*.—In section (1) poor ; in section (2) good.

*Supplies*.—In section (1) scanty ; section (2) traverses a rich wheat-growing district.

*Telegraph line*.—There is a single-wire line throughout with offices at Bajgiran (Russian) or Gaudan, Bajgiran (Persian), and Kuchan.

No. of stage.	Names of stages.	DISTANCES.		REMARKS.
		Inter-mediate.	Total.	
1	KURT SU ..	16·8	16·8	Distance is taken from Ashkabad railway station, which is about a mile from the town. On leaving

Ashkabad town the road runs due south over a level plain. The first 7 miles are metalled. At 10 miles commences an ascent. Width of road said to be about 25 feet. Nine horses are kept at the posting house of Kurt Su where there is a population of 40, including 15 Frontier Guards. Water, from a well, scanty.

In June 1908 an Infantry Brigade encamped here for manœuvres, but had to carry its water to camp from several small springs.

ROUTE No. 27—*concl'd.*

2	BAJGIRAN (BAJ-GIRHA OR PERSIAN BAJIRAN), 5,500'.	13·4	30·2	Road runs up a valley, then ascends by a series of zig-zags, and for a few miles runs high above the stream
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which waters the valley. At 11½ miles reach Gaudan, which is sometimes called by the Persians Bajgiran-i-Rus or Bajgiran-i-Urus to distinguish it from the Persian village. Gaudan is a poor Russian village (population about 100) with a telegraph office, posting house, where 6 horses are kept, a small bad *serai* and scanty water and supplies. Gaudan stands at the head of a valley draining southwards. The Frontier Guard detachment of 50 men, under an officer, garrisons a strongly built loopholed blockhouse, which lies alongside the road about ½ mile south of the pass. From Gaudan the road makes a slight ascent to a low *kotal*, which is the frontier, and then descends to the Persian village of Bajgiran.

## Route No. 28.

## ASHKABAD TO FIRYUZA (FIRUZEH OR FIRUZA).

*Authority and date.*—Central Asian Railway Guide, 1903.  
Davis, 1903. Logofet, 1903.

*Epitome.*—23 miles, 1 stage. A made road, suitable for field artillery and wheeled transport. In June 1907 a flood swept down the Firyuza Gorge (stage 2) and carried away a bridge, 86 feet in length.

There is a telegraph line (2 wires) between Ashkabad and Firyuza.

In July 1908 the narrow gauge (2' 4") railway, which was opened in 1906, from Bezmein to Firyuza, was partly relaid. It now runs direct from Ashkabad *viâ* Kyoshi to Firyuza, 24·2 miles.

*Connections:* at Ashkabad Nos. 24, 25, 27, 34 and 44; at 2 Kozelnoye, No. 29; and at Firyuza No. 30 and Routes in Persia, Volume I, N. 56.

No. of stage.	Names of stages.	DISTANCES.		REMARKS.
		Inter-mediate.	Total.	
1	FIRYUZA (FIRUZEH OR FIRUZA) about 2,000'.	23	23	Road <i>viâ</i> Kyoshi (Koshi) and Baghir, reaching the Firyuza Gorge at 15 miles. Elevation at this point

ROUTE No. 28—*concl'd.*

about 1,300'. The road crosses the Firyuza stream and runs up the left bank, passing the prosperous Russian settlement of Kozelnoye at about 19 miles. The settlers rear cattle and sell dairy produce at Askhabad and Firyuza. At 22 miles the road crosses to the right bank of the stream. Firyuza is the summer head-quarters of the Government of Trans-Caspia and of the 2nd Turkistan Army Corps. In the winter it is practically abandoned except for the Frontier Guard Post (strength unknown).

## Route No. 29.

## ASHKABAD TO KHAIRABAD.

*Authority and date.*—Sketch of Trans-Caspia, 1892. Logofet, 1903.

*Epitome.*—46·2 mi'es, 2 stages. A military road, suitable for field artillery and wheeled transport. Water-supply good. Apparently few supplies are obtainable at Kozelnoye; Khairabad obtains its supplies from neighbouring Persian villages.

*Connections:* at Ashkabad, Nos. 24, 25, 27, 34 and 44; at Kozelnoye, No. 28; at Persian Khairabad connect Routes in Persia, Volume I, Nos. 56 and 59.

No. of stage.	Names of stages.	DISTANCES.		REMARKS.
		Inter-mediate.	Total.	
1	KOZELNOYE ..	19	19	<i>Vide</i> Route 28, stage 1. Kozelnoye lies in the Firyuza Gorge. Water from Firyuza stream. A Russian settlement.
2	KHAIRABAD .. 7,000'.	27·2	46·2	General direction of road west through mountainous country. The road at first traverses barren defiles, and afterwards enters a fine wood. At about 14 miles, pass the Frontier Guard Post of Chayek (strength unknown) which guards the entrance of the Chuli defile. The road rises steadily the whole way from Kozelnoye to Khairabad. The latter is a sanatorium for troops. Persian Khairabad lies about 1 mile to the south of Russian Khairabad.

and afterwards enters a fine wood. At about 14 miles, pass the Frontier Guard Post of Chayek (strength unknown) which guards the entrance of the Chuli defile. The road rises steadily the whole way from Kozelnoye to Khairabad. The latter is a sanatorium for troops. Persian Khairabad lies about 1 mile to the south of Russian Khairabad.

## Route No. 30.

FIRYUZA (FIRUZEH OR FIRUZA) TO GAUDAN (BAJGIRAN-I-URUS).

*Authority and date.*—Logofet, 1903.

*Epitome.*—35 miles (approximately), 2 stages. Logofet gives no distances. The total mileage has been calculated from the map, with an allowance for the winding nature of the road. A mountain track practicable for mule transport and mountain artillery only. Water-supply good. No supplies, except cattle, sheep, and grazing at Gendivar.

For an alternative, *viâ* Serani, *vide* Routes in Persia, Volume I.

*Connections* : at Firyuza : No. 28, and Routes in Persia, Volume I, No. 56 ; at Gaudan, Nos. 26 and 27.

No. of stage.	Names of stages.	DISTANCES.		REMARKS.
		Inter- mediate.	Total.	
1	GENDIVAR ..	..	..	Road runs over the spurs of the Kopet Dagh Range. The frontier post of Gendivar (strength unknown) lies in a valley down which runs a road to Ashkabad from Persian territory. The Turkomans graze large herds of cattle and flocks of sheep in this valley. Water from a well.
2	GAUDAN .. (BAJGIRAN-I- URUS).	..	35	Road through wild country. Pass the Frontier Guard Post of Karanki (strength unknown) which lies in a barren valley. Soon afterwards the track strikes the Ashkabad-Meshed cart road, <i>vide</i> Route 27, stage 2.

## Route No. 31.

GEOK TAPA (GEOK TEPE) TO RABAT (ROBAT).

*Authority and date.*—French Map  $\frac{1}{1,000,000}$ , 1901. Logofet, 1903.

*Epitome.*—35 miles, 2 stages. A cart-road, practicable for wheeled transport and field artillery. Water-supply good. A small amount of supplies and good grazing procurable at Garmab.



ROUTE No. 31—*concl'd.*

*Connections*: at Geok Tapa, No. 34; and at Garmab, No. 35, and Routes in Persia, Volume I, No. 57.

No. of stage.	Names of stages.	DISTANCES.		REMARKS.
		Inter-mediate.	Total.	
1	GARMAB ..	25	25	Near the railway station of Geok Tapa there is a corn-mill. The road runs south-south-west, 5 miles to the old fortress of Geok Tapa, at 8 miles crosses the Sakiz Ab stream, at 23 miles passes the Russian village of Skobolevka and at 24 that of Mikhailovka. Garmab is the head-quarters of a section of the Frontier Guard and has a Russian Church. The village lies in a fertile valley.
2	RABAT (ROBAT)	10	35	General direction of road south. At about 8 miles it crosses the crest of the Kopet Dagh and thence descends to the Persian village of Rabat.

## Route No. 32.

## KIZIL ARVAT TO KARA KALA.

*Authority and date.*—Trans-Caspian Review, 1895. Russian Postal Guide, 1908.

*Epitome.*—59·2 miles, 4 stages. A post-road practicable for field artillery and wheeled transport. Water-supply poor and supplies generally scarce.

There is a telegraph line (one wire) between Kizil Arvat and Kara Kala.

*Connections*: at Kizil Arvat, Nos. 39 34, 36, and 42; at Khojam Kala No. 36; and at Kara Kala Routes in Persia, Volume I, No. 55.

ROUTE No. 32—*concl'd.*

No. of stage.	Names of stages.	DISTANCES.		REMARKS.
		Inter-mediate.	Total.	
1	KAMISHLI ..	17	17	At half a mile from the railway station reach the posting house of Kizil Arvat where 7 horses are kept. The road runs south over the Volchi Vorota (Wolf's Gate) Pass, which crosses a range of the Kopet Dagh mountains to Kamishli, a posting-house with 7 horses and a well. *
2	KHOJAM KALA .. (KHWAJA KALA).	9·9	26·9	Khojam Kala (posting-house with 6 horses) lies on the Chikishlyar-Bami road, <i>vide</i> Route 36, stage 6. There is a good stream at Khojam Kala and "abundant" fuel and forage.
3	JELIL ..	21·3	48·2	General direction of road south-west. At Jelil there is a posting-house with 6 horses.
4	KARA KALA ..	11	59·2	Road turns south and, after crossing a range of hills, descends into the valley of the Sumbar River. Kara Kala lies on the right bank. It is the head-quarters of the Kara Kala Prista stvo. Wheat is grown in the valley of the Sumbar. The Russian village of Aleksandrovka lies to the west of Kara Kala.

## Route No. 33.

## KIZIL ARVAT TO THE VALLEY OF THE CHANDIR RIVER.

*Authority and date.*—Russian 40-verst Map, 1892. Review of Trans-Caspia, 1892.

*Epitome.*—100 miles (approximately). No stages given. Suitable for camel transport, impracticable for field artillery. Could be made into a cart-road without very great difficulty. The Sumbar River, at all times difficult for laden camels to pass, is impassable when in flood. Caravans, bringing wheat from Persia, use this road to reach the Central Asian Railway at Kizil Arvat. Water and supplies poor.

ROUTE No. 33--*concl'd.*

*Connections* : at Kizil Arvat, Nos. 32, 34, 39 and 42.

No. of stage.	Names of stages.	DISTANCES.		REMARKS.
		Inter-mediate.	Total.	
6 marches.	VALLEY OF THE CHANDIR RIVER.	..	100	For the first 10½ miles the road follows the Kizil Arvat-Kara Kala Post road, <i>vide</i> Route 32, stage 1. It then strikes south-south-east, traverses the Elanli Pass, and reaches the village of Yuvan Kala in the valley of the Sumbar River, the water of which is very salty and unfit to drink. After fording this river, the road passes through the defiles of Shar-Tepe and Alti-Taghdan and enters the valley of the Chandir River. From this point to Bujnurd (Persian) is by map about 85 miles. Another caravan track, connecting the valley of the Sumbar with that of the Chandir, passes through the Chokrar, Kara Kisi and Tyamil defiles. This track too could be converted into a cart-road without very great labour.

## Route No. 34.

## KIZIL ARVAT TO ASHKABAD.

*Authority and date.*—French Map  $\frac{1}{1,000,000}$ , 1901. Turkistan Guide, 1903. W.O. Report, 1905.

*Epitome.*—140.5 miles, 8 stages. By the Central Asian Railway, to which the road is roughly parallel, the distance is 136.6 miles. Practicable for field artillery and wheeled transport. The road runs at the foot of the Kopet Dagh range and crosses numerous mountain streams. In spring and early summer, when these are in flood, going would be difficult. Water-supply, for animals, excellent; drinking water has to be brought to Koj and Gook Tapa Railway stations by rail. The road traverses the rich Akhal Tekke Oasis, a highly cultivated strip, some 13 miles wide, which produces cotton. Wheat is grown in insufficient quantities for the wants of the inhabitants, and is imported from European Russia, Persia, and Khiva.

Kizil Arvat had a population of 3,588 in 1901. It has large workshops and an engine depot.

Heights noted against stages are those of the railway stations of the same name.

ROUTE No. 34—*contd.*

*Connections* : at Kizil Arvat, Nos. 32, 33, 39 and 42 ; at Bami, Nos. 36 and 43 ; at Geok Tapa, No. 31 ; and at Ashkabad, Nos. 24, 25, 27, 28, 29 and 44.

No. of stage.	Names of stages.	DISTANCES.		REMARKS.
		Inter-mediate	Total.	
1	KOJ (KHOJA) ..	17·5	17·5	Road runs south of, and roughly parallel, to the railway, and at a distance never exceeding 1½ miles. Drinking water for the railway station of Koj is brought by train. 1 mile south of the station lies a Turkoman village of the same name, with 150 inhabitants.
2	BAMI ..	16	33·5	In the first 10 miles the road crosses 3 mountain streams and passes at 11½ miles the Turkoman village of Zaulu and at 14 miles the village of Kizil Chashma. At Bami there are springs with good water. The surrounding country is densely inhabited.
3	ARCHMAN ..	26	59·5	At 7 miles pass the village of Beurma and at 20½ miles the railway station of Archman, drinking water for which is pumped from springs. The Turkoman village of Archman has 800 inhabitants and that of Nukhur, which lies 9 miles to the west-south-west, has 900.
4	BAKHARDEN ..	15·5	75	At 9 miles pass the village of Sunchi. Bakharden railway station obtains water from the spring of Arvaz, which yields 140 cubic feet (814 gallons) of water per hour. Bakharden is a dépôt of railway material (3rd class) and has a store of <i>saraul</i> fuel. The settlement near the station has a population of 400 and the Turkoman village of Bakharden, 1½ miles to the south-east, about 500 inhabitants.
5	KELYAT (KELIATA). (RAILWAY STATION OF—).	19	94	The road passes the villages of Durun, Karagan, Karez-Nur-Verdi-Khan, Kelyat (at 14 miles) and Ak Kala. The railway station of Kelyat obtains water from canals, which are fed by mountain springs.

ROUTE No. 34—*concl'd.*

6	GEOK TAPA ..	17·5	111·5	The old fortress of Geok Tapa, stormed by Skobelef in 1881, lies 5 miles south-south-west of the railway station, near which there is a historical museum and a mill. The soil is irrigated by canals fed by the Garm-ab stream; drinking water for the railway station is brought by train.
7	BEZMEIN ..	14	125·5	At 6½ miles pass Ohor Kala and at 10 miles Babirak Kala. The Turkoman village of Bezmein has about 2,200 inhabitants. Water for the railway station is obtained from a karez.
8	ASHKABAD ..	15	140·5	On this stage is passed the Turkoman village of Baghir lying 4 miles to the south.

## Route No. 35.

## FROM CHAT TO GARM-AB.

*Authority and date.*—Russian 40-verst Map, 1892. French Map  $\frac{1}{1,000,000}$ , 1901. Logofet, 1903.

*Epitome.*—175 miles, 8 stages. Practicable for camel transport; impassable for field artillery. Stage 6 is difficult. A little used track connecting the posts of the Frontier Guard, the strength of which is not known. Water-supply poor in stages 1, 6 and 7; good in remainder. No supplies in stages 1 and 6. The valleys of the Chandir (*vide* stages 2 and 3) and of the Sumbar (*vide* stages 4 and 5) are coming under cultivation, now that raiding has ceased.

*Connections* : at Chat, No. 36, and Routes in Persia, Volume I, Nos. 70 and 90; at Garm-ab, No. 31, and Routes in Persia, Volume I, No. 58.

No. of stage.	Names of stages.	DISTANCES.		REMARKS.
		Inter-mediate.	Total.	
1	SANGU DAGH ..	35	35	Ford the Atrek river; both descent and ascent very steep and difficult. The track then runs through the mountains.

ROUTE No. 35—*contd.*

Logofet lost his way and had to attract the attention of the garrison of the Frontier Guard post of Khor Olum by firing. There is a good spring near the post, but the surrounding hills are almost bare. The track continues to the Frontier Guard post of Sangu Dagh, which lies in a hollow near a clump of trees. There is a small patch of cultivation and a very good spring.

2	NAARLI ..	15	50	Mountain track to Frontier Guard post and the Goklan village of Kizil Imam. From here the road enters
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the valley of the Chandir River, in which cultivation, Indian-corn, millet, barley and cotton is met occasionally; sheep find grazing in the side valleys. The post of Naarli is near the village of the same name.

3	CHAKAN KALA ..	15	65	Cultivation increases on this stage. The Frontier Guard post of Chakan Kala has 4 towers; it lies at the
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mouth of a defile by which an old Turkoman raiding road leads into Persian territory.

4	DUZLU TAPA (DUZLU TEPE).	30	95	The track leaves the valley of the river Chandir, and, passing the Frontier Guard post of Ak Kaya, traverses
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mountainous country. The Frontier Guard post of Duzlu Tapa lies in the valley of the Sumbar, which is here sometimes called the Sunt Su. Wheat and melons are largely cultivated by means of numerous small irrigation canals led off from the river. Duzlu Tapa is 60 miles from Kara Kala, *vide* Route No. 32, stage 4.

5	KAINÉ KASIRU (KOINA KYASIB).	13	108	Road up the cultivated valley of the Sumbar. At the Frontier Guard post of Kaine Kasiru there is a well built
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hospital with 17 beds, of which 2 are for officers. The post is an officer's command.

6	ARVAZSKI POST	17	125	Road continues up valley to Frontier Guard post of Daine, near which <i>sesamum</i> , rice and wheat
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are grown. The track now leaves the valley of the Sumbar and rises to the summit of Arvaz, about 7,000'. Track always difficult and, after rain, dangerous. The Frontier Guard post (Arvazski post) is situated on a *col*, with a good spring.

7	SARATOVSKI ..	30	155	The track runs over bare hills to the Frontier Guard post of Sulyukli which lies close to the Russian village of
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Saratovski.

ROUTE No. 35—*concl'd.*

The settlers grow wheat, barley, millet, and potatoes, and keep cattle.

8	GARM-AB ..	20	175	A cart road through a picturesque defile, down which runs the Kara Chai stream.
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## Route No. 36.

## CHIKISHLYAR TO BAMI.

*Authority and date.*—Marvin, 1880. Russian 40-verst Map, 1892.

*Epitome.*—207 miles, 8 very long stages. Lomakin's force in August and September 1879 took 23 days. The road is practicable for field artillery and wheeled transport. Difficult, owing to mud, in autumn. Water-supply plentiful, but of bad quality at stages 2, 3, 4 and 5, ample and of good quality at stages 6, 7 and 8, and scanty at stage 1. Supplies, except fuel, not obtainable at the first 5 stages. In remaining stages forage is abundant, but no wheat beyond their own requirements is grown by the Turkoman inhabitants.

There is a telegraph line (number of wires unknown) between Chikishlyar and Bami.

In August 1879 a force of about 15,000 men was concentrated at Chikishlyar (a port on the Caspian with about 30 wooden houses, a Customs House, and a detachment of the Frontier Guard) for operations in the Akhal Tekke Oasis. It advanced equipped with camel and *arba* transport, roughly on the line of the present road to Bami. The troops suffered greatly from heat and bad water. Numerous detachments were made *en route*, and the force actually engaged at Denghil Tapa (Geok Tapa) under Major-General Lomakin only numbered 3,000 men. The column was repulsed by the Turkomans and retired on Chikishlyar; the return march from Bami took about 35 days.

*Connections:* at Chikishlyar, Nos. 37 and 38; at Chat, No. 35; and Routes in Persia, Volume I, Nos. 78 and 90; at Khojam Kala, No. 32. and at Bami, Nos. 34 and 43.

No. of stage.	Names of stages.	DISTANCES.		REMARKS.
		Inter-mediate.	Total.	
1	KARAJA BATIR	29·8	29·8	General direction east, across desert. No vegetation, clayey soil. In 1879 there was a redoubt for

ROUTE No. 36—*contd.*

a company of infantry and some Cossacks at Karaja Batir. Water-supply not known.

2	YAGLI OLUM ..	27·8	57·6	Road continues over desert. Yagli Olum stands on the right bank of the Atrek. The river runs in a deep
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bed ; tamarisk is available as fuel. Forage scarce. There is a Frontier Guard Post, an officer's command, to guard the ford of Yagli Olum. Telegraph office and hospital.

3	CHAT (CHAT-I-ATREK).	27·2	84·8	Road up right bank of Atrek, passing the post of Tomak. At 6½ miles commence the ruins of Dash Verdi, which
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extend for over 6 miles. Chat, a station of the Frontier Guard, stands on a clay bluff, 400' to 500' high. The fort was built in 1878, to hold 2 battalions of infantry, 1 sotnia of Cossacks and 4 guns. It is the point at which the Atrek and Sumbar rivers join. The latter is so salt that it is necessary to draw drinking water from the Atrek above the junction of the two rivers. Forage is only obtainable from the Persian bank. There is a ford, passable from January to July, ¼ mile below Chat.

4	DUZLU OLUM	31·5	116·3	Road up the right bank of the Sumbar. Duzlu Olum lies 2 miles above the junction of the Chandir with
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the Sumbar. There is a ford across the Sumbar and a track runs up the right bank of the Chandir from Duzlu Olum to Naarli (*vide* Route 35, stage 2).

5	TERSAKAN ..	19·9	136·2	About 5 miles beyond Duzlu Olum the road crosses to the left bank of the Sumbar on which the post
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of Tersakan lies.

6	KHOJAM KALA (KHWAJA KALA).	39·8	176	The road after crossing the Sumbar River leaves the river valley and enters the foot hills of the
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Kopet Dagh. For Khoja Kala, *vide* Route 32, stage 2. In 1879 Lomakin's force used a camping-ground at Margiz, 9 hours' march from Tersakan, to divide this long stage, on which very little water is to be found.

7	BENDESEN (BAN-DASAN).	16	192	The road runs through a defile to Bendesen, which is situated in a broad valley, with a rivulet of
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good water.



## ROUTE No. 36—concl'd.

8	BAMI	..	15	207	The road rises gradually for 9 miles to the crest of the Kozelni (Bendesen) Pass (height about 3,000'), and then descends to the Akhal Tekke Oasis. Bami lies 2 miles from the foot of the pass and is a station on the Central Asian Railway. ( <i>Vide</i> Route 34, stage 2.)
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## Route No. 37.

## BALA ISHEM TO CHIKISHLYAR.

*Authority and date.*—Russian 40-Verst Map, 1892. Turkistan Calendar, 1904.

*Epitome.*—145·8 miles, 7 stages. A caravan road which is practicable for camel transport and probably offers no great obstacles to the movement of field artillery. Water-supply bad; no supplies, except scanty grazing for camels.

*Connections.* : at Bala Ishem, No. 39; and at Chikishlyar, Nos. 36 and 38.

*Note.*—Bala Ishem, a railway-station on the Central Asian line, 104 miles from Krasnovodsk, should not be confused with Bala Ishem on the Uzboi (*vide* Route 42, stage 4).

No of stage.	Names of stages.	DISTANCES.		REMARKS.
		Inter-mediate.	Total.	
1	SHAIRDI ..	40	40	Road over waterless Kizil Kum desert. There is a lake at Shairdi, quality of water not known. A camel track leading from Kukhar Mama Bay (on the Caspian) to Kazanjik, a station on the Central Asian Railway, connects at Shairdi.
2	BUGDALI ..	33·3	73·3	The road passes the rain water pools of Tigli and Eganji. There is a rain water lake and a well (yield unknown) at Bugdali. The bed of the river Giaur (dry in April 1873) is crossed here. From Bugdali a camel track leads to Chat. <i>Vide</i> Route 36, stage 3. Distance about 70 miles.
3	ORAZ GULI ..	14·6	87·9	No information as to water-supply at Oraz Guli.

ROUTE No. 37—*concl'd.*

4	GYAMEJIK (GYAMJIK).	9·3	97·2	There is a well (yield unknown) at Gyamejik and a rain water pool $2\frac{1}{2}$ miles to the south.
5	KARA TAPA (KARA DEFE).	16	113·2	A well (yield unknown) at Kara Tapa.
6	AKH PATLAUKH (AK PANLAUKH)	21·3	134·5	At 13 miles pass a petroleum spring and the well of Keimir. There are 2 wells of unknown capacity
at Akh Patlaukh.				
7	CHIKISHLYAR ..	11·3	145·8	Chikishlyar is a Caspian port. <i>Vide</i> Route 36, Summary.

## Route No. 38.

## CHIKISHLYAR TO ASTRABAD.

*Authority and date.*—Sykes. Yate, 1894. Logofet, 1903. Dawkes, June 1907.

*Epitome.*—66 $\frac{1}{2}$  miles, 4 stages. Practicable for wheeled transport and field artillery, except in wet weather, when the clay in stage 1 would make going very difficult. Water-supply bad, until the Atrak (stage 2) is reached. No supplies, except grazing and a little fuel. There is a telegraph line from Chikishlyar to Astrabad.

*Connections* ; at Chikishlyar, Nos. 36 and 37 ; and at Astrabad, Routes in Persia, Vol. I, Nos. 73, 74, 76, 77, 78, 82, 103, 109 and 110.

In January 1908, when disorders in Persia made the occupation of Astrabad by the Russians a possibility, considerable supplies were collected at Chikishlyar. The expedition would presumably have followed the route now described.

No. of stage.	Names of stages.	DISTANCES.		REMARKS.
		Inter-mediate.	Total.	
1	BEUMBASH (BA-UMBASH LAKE).	20	20	General direction east-south-east. First 4 miles over shell sand, then salines, and lastly clay soil, hard in sum-

ROUTE No. 38—*concl'd.*

mer, soft in winter. There is a Frontier Guard Post (strength unknown at Baumbash, which gets from a deep well sufficient water for the men, their horses and the 20 sheep and few pigs which the detachment keeps : 80 old wells in the neighbourhood of the post ; the water of many of them is unpleasant. There is a track from here *viâ* the Frontier Guard Posts of Karatash and Chatli, both on the Atrek, to Yagli Olum ; *vide* Route No. 36, stage 2.

2	BARIM FORD ..	13	33	General direction south-east. The Atrek here forms the Russo-Persian boundary. Though the
				river higher up is only fordable at a few places at the point where the telegraph line crosses it, the Atrek is not more than 3' deep and 30' wide.

The *Turkistan Review* of 9 (22) 12-1907 announced the completion of a bridge over the Atrek, which is possibly at, or near, this ford.

The nomads find grazing on the banks of the Atrek and there are bushes for fuel in its bed.

3	AK KALA ..	23	56	General direction south-east. Over the country of the Jafarbai tribe who own large numbers of camels, sheep and cattle. At 15 miles cross the Tohmak stream.
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Ak Kala is a Persian fort, which is supposed to guard the bridge over the Gurgan river, here 15' to 16' deep. The bridge is of 4 arches with a 10' road. The fort has no military value and its garrison are practically prisoners, the Persian Government having no control over the Turkoman nomads of the district. There is a good deal of cultivation on the banks of the Gurgan.

4	ASTRABAD, 377'	10½	66½	At about 5 miles cross the bed of the Kara Su by a bridge and causeway. Then over the level plain
				to Astrabad, passing the villages of Muhammadabad, Karimabad, and Amirabad.

## Route No. 39.

KRASNOVODSK TO KIZIL ARVAT.

*Authority and date.*—Turkistan Calendar, 1904. W. O. Report, 1905.

*Epitome.*—208·2 miles, 13 stages. Practicable for field artillery and wheeled transport. Not known how the road crosses the ravine

ROUTE No. 39—*contd.*

of the Uzun Su, stage 12 ; if there is no bridge the road must be impassable when the river is in flood. Water-supply bad in stages 1 to 9, good in remainder. Supplies scanty ; very little is obtainable beyond *saxaul* for fuel and that only in stages 5 to 13.

Krasnovodsk is the main port of Trans-Caspia and the sea terminus of the Central Asian Railway. In 1880-81 it was the base of Skobelev's force, which advanced along the line of the present road and railway, against Geok Tapa near Ashkabad.

*Connections* : at Krasnovodsk, Nos. 40 and 52, and by steamer with Baku, Astrakhan and Fort Alexandrovsk (distant about 200, 550 and 400 miles, respectively) and all the Caspian ports at Bala Ishem, No. 37 ; and at Kizil Arvat, Nos. 32, 33, 34 and 42.

No. of stage.	Names of stages.	DISTANCES.		REMARKS.
		Inter-mediate.	Total.	
1	KAILO .. ..	13·3	13·3	The road runs parallel to the railway along the sandy shore of Krasnovodsk Bay. The water for all
				the railway stations up to that of Yagman, stage 4, inclusive, is brought by rail from the condensers at Krasnovodsk.
2	KABA TENGIB ..	17·9	31·2	At 8 miles pass the railway station of Yangata.
3	BELEK .. ..	19·9	51·1	At 8½ miles pass a crossing place for trains.
4	YAGMAN .. ..	17·9	69	At 10 miles a crossing place on the railway.
5	JEBEL .. ..	13·9	82·9	The road and railway leave the shore of the Bay of Krasnovodsk, the eastern arm of which is called Bal-

kan Bay. Jebel railway station lies under the Great Balkan range, from which it obtains drinking water by means of a pipe line. There is a buffet and a *saxaul* store at the station, near which lies a Russian village with 200 inhabitants. The nomads of the neighbourhood rear cattle.

ROUTE No. 39—*concl'd.*

6	BALA ISHEM ..	19·9	102·8	This and the next two railway stations have also to get their water by train. There is a branch railway from here to the great Petroleum Hill (Neftyanaya Gora).
7	AIDIN .. ..	19·9	122·7	The road passes over the Uzboi or ancient bed of the Oxus. There is a railway station at Aidin.
8	PEREVAL ..	9·9	132·6	To the south of the railway station of Pereval (=pass) lies a pass over the Little Balkan Range.
9	AKCHA KUIMA..	9·9	142·5	There is a <i>saxaul</i> depôt at the railway station of Akcha Kuima; large quantities of this fuel are cut in the neighbourhood. In 1900 nearly 500 tons were sent away by rail.
10	KAZANJIK ..	20·6	163·1	Kazanjik has a population of about 700, a hospital with 20 beds and railway workshops. Water by pipe and by canal from the mountain spring of Ijiri.
11	UZUN SU ..	10·6	173·7	The railway station of Uzun Su obtains its water from the river of the same name.
12	USHAK (ISKAN- DER).	14·6	188·3	Cross the Uzun Su, which runs in a deep ravine. There are numerous mountain springs in the Kyuren Dagh Range near Ushak, but the railway station obtains its water by train. Many nomads in the neighbourhood.
13	KIZIL ARVAT ..	19·9	208·2	For Kizil Arvat, see Route 34, Summary.

## Route No. 40.

FROM KRASNOVODSK TO KHIVA.

*Authority and date.*—Lansdell, 1882; Lessar, 1885; Russi Route Map, 1893; Lt.-Col. Zalyesski, 1899.

*Epitome.*—468½ miles, 22 stages. A main caravan route practicable for camel-transport only in stages 1 to 14 and for field

ROUTE No. 40—*contd*

artillery and wheeled transport in the remainder, with the exception of stages 18, 19 and 20 which could be improved sufficiently without great labour. The descent from the plateau of Ust Urt is very difficult. The road runs through desert for the first 16 stages, after that the rich Khivan oasis is traversed. Water-supply bad in stages 1 to 16. Caravans using this route find sufficient water at Yazı Gishem, Kum Sebshem and Charishli (stages 3, 9 and 12) only, and carry water for the intervening distances. The early spring is the most favourable time to use this route, as a small amount of grazing is then obtainable for horses and camels.

*Connections* : at Krasnovodsk, Nos. 39 and 52 ; at Tuar, No. 53 ; at Kum Sebshem, No. 41 ; at Khatib, No. 42 ; at Ilyanli, No. 48 ; at Zmukshir, No. 43 ; and at Khiva, Nos. 44, 45, 46, 47 and 49.

No. of stage.	Names of stages.	DISTANCES.		REMARKS.
		Inter-mediate.	Total.	
1	KASKIR BULAK	16	16	Direction north-east. The wells at Kaskir Bulak were dry in April 1899.
2	UZUN SYUILI (SUILI).	30	46	Through low hills. The water in the 11 wells at Uzun Syuili is fit for horses and camels only. Near each well is a tank, 7' long by 4' wide, hewn out of the limestone. Uzun Syuili can also be reached from Krasnovodsk <i>via</i> Kasin by a difficult camel track ; total distance, 50 miles.
3	YAZI GISHEM (YAZIGSHEM).	14	60	The water in the wells at Yazı Gishem is brackish, but fit for human consumption.
4	AGAYUK (ER OILAN).	16	76	The water in the wells at Agayuk is fit for camels only. There is coarse vegetation on the surrounding steppe.
5	YANGI SU (YANGI ROBAT).	29	105	No water at Yangi Su (April 1899) ; 6½ miles to the west.south-west is a pond which is full of water after rain.

ROUTE No. 40—*contd.*

6	PORTSI KUP (PORTOKOP).	14	119	Road over steppe with occasional depressions; between Agayuk and Portsi Kup a hill, 650' above sea level, is crossed. The water in the pond at Portsi Kup was undrinkable even by camels in April 1899. Portsi Kup lies at the foot of the Togus Tepe hills.
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7	TUAR ..	18½	137½	Road over hilly ground. About half way cross the hill of Sari Baba (height 300'). On the top of it is a Mahomedan tomb, and at the foot is Tuar, where are 6 wells in a depression; water fit for horses and camels only. Boiling cannot render it fit for human consumption.
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8	SAKIZ KHAN .. (URNUN KUDUK).	18½	156	Surrounding country quite bare. At first across low ground, being the old bed of a river or an arm of the Caspian sea; then ascends to a height of 250'; further on it descends to another river-bed, and again ascends 200'. At Sakiz Khan there is a well, with good water, but in April 1899 it was dry.
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9	KUM SEBSHEM	26	182	At first south-east for 4 miles, where a track from Uzun Syuili (stage 2) <i>via</i> Gezli Ata, Chagil and Doungara, an alternative to stages 3 to 8, joins. Then north-east over flat steppe with scrubby vegetation only and no bushes. This steppe is called Begenjalri Kir. The road next descends to low country over which it passes for about 7 miles, when it descends a range of cliffs, 300' high, running from north-west to south-east. The last 4 miles are in an old bed of the Caspian Sea at Kum Sebshem are 12 wells, well built, and, in 1882, in good repair.
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10	DAKHLI (DAGHELI).	21	203	For road to Kunya Urgench <i>vide</i> Route No. 41. The road to Khiva turns east-south-east, bending to north-east at 14 miles. There is a group of wells at Dakhli; water bitter. There is a track direct from Tuar to Dakhli, an alternative to stages 8 to 10, distance 65 miles; water-supply bad.
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11	TUYUKLU ..	35	238	Road over Kaplan Kir plateau (the southern portion of the Ust Urt), the average height of which above the sea is about 600'. Water scarce. No information as to supply of the well of Tuyuklu.
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ROUTE No. 40—*contd.*

12	CHARISHLI ..	36	274	The road leaves the plateau, descending the precipitous cliff known as the "Chink." The wells of Charishli lie in the old bed of the Oxus, or Uzboi, at the point where two ancient channels unite. Water fresh. The low-lying desert of the Karakum commences at Charishli.
13	KANGA-KUYU ..	33	307	No information as to the yield from the well at Kanga-kuyu.
14	KHATIB (KHATIV OF GIAUR KUYU).	24	331	Khatib lies on the road from Kizil Arvat to Khiva, <i>vide</i> Route No. 42. There are 2 wells, depth 56', at Khatib, with brackish but drinkable water. In June 1884 the supply was insufficient for a party of 250 men with 320 animals: 40 water skins full were required in addition. No forage or firewood obtainable.
15	SHAH SENEM ..	20	351	Through sandy desert with <i>saxaul</i> . At 6 miles a large isolated sand-hill to the west of the road. Near Shah Senem are the ruins of a fort, and two wells; the water of one is drinkable, though bad, that of the other is quite salt. This and the next two stages are practicable for field artillery and wheeled transport.
16	KARGALJA ..	16	367	At 12 miles the road crosses an old river-bed. Kargalja is a Khivan village, on the extreme edge of the Khivan oasis.
17	KUNYA UAZ ..	19	386	Road down the right bank of a canal. At Kunya Uaz there is a well, at which caravans halt.
18	ILYANLI (ILIALI)	25	411	Through cultivation. Ilyanli is a Khivan village with 160 houses and 100 shops.
19	ZMUKSHIB ..	10	421	The village of Zmukshir gets water from a canal. There is an alternative to stages 16 to 19 <i>via</i> Chagil, <i>vide</i> Route No. 43, stage 9. Water-supply poor.



ROUTE No. 40—*concl'd.*

20	EFREM ..	15	436	Through villages of Daud an, Takiá Bazar and Kara Kulak. Efrem is an Uzbek village.
21	KAZAVAT .. (KHAZAVAT, OR GAZAVAT).	13	449	A village, about 300 houses on the Kazavat canal. The surrounding country is highly cultivated. Markets, at which corn and cattle are sold, are held here. The road in this and the next stage is freely used by <i>arbas</i> ; all the canals crossed are bridged.
22	KHIVA ..	19½	468½	Road through rich cultivation and numerous gardens. Khiva, the capital of the semi-independent Khanate of the same name, is a decaying town. Its present population may be estimated at not more than 6,000. It has, however, still some commercial importance.

## Route No. 41.

FROM KRASNOVODSK TO KUNYA URGENCH (NEW URGANJ OR KHWAJA ILI).

*Authority and date.*—Russian Route Map, 1893; *Turkistan Gazette*, 1897; Lt.-Col. Zalyesski, 1899.

*Epitome.*—374 miles, 17 stages. Some of the stages as given are very long; caravans take about 23 days. This is the principal caravan route between the Caspian sea and the Khivan oasis. Practicable for camel transport only in stages 1 to 11 and for field artillery and wheeled transport in the remainder. Water-supply bad; caravans take in supplies at stages 3 (Yazi Gishem), 9 and 13. No supplies, except a little grazing in early spring.

*Connections:* at Krasnovodsk, Nos. 39 and 52; at Tuar, No. 53; at Kum Sebshen, No. 40; and at Kunya Urgench, Nos. 48 and 51.

No. of stage.	Names of stages.	DISTANCES.		REMARKS.
		Inter-mediate.	Total.	
1 to 9	KUM SEBSHEN ..	182	182	<i>Vide</i> Route No. 40, stages 1 to 9.

ROUTE No. 41—*contd.*

10	KAZAKLI (KAZAKTI).	..	26	208	Direction north from Kum Sebshen over sandy plain ; then east along cliffs which form edge of plateau of Kaplan Kir, a name for the southern portion of the Ust Urt. The ascent is very steep ; the cliffs are here some 300' high. There are 2 wells, 120' deep, at Kazakli. Water salt, and drinkable by camels only ; horses refuse it.
11	UZUN KUYU	..	33	241	Road north-east over pla- teau, the general height of which is about 600'. One well, 189' deep, at Uzun Kuyu, with brackish water, but horses and camels will drink it. Scanty grazing.
12	UST UBT	..	25	266	Continues north-east. At 5 miles a pond of rain water. Thence the road is made and practicable for field artillery and wheeled transport. The old fort of Ust Urt stands on the cliff forming the eastern boundary of the plateau. No informa- tion as to water-supply.
13	SARI KAMISH	..	36	302	Road descends to the Uzboi, or old bed of the Oxus. It then passes two salt lakes lying in the Sari Kamish depression. Sari Kamish has some wells (number unknown) which lie to the east of the northern lake. The water is 18' below ground level and is said to be 12' deep. It is fresh enough for men to drink.
14	DEKCHA	..	10	312	A steep ascent from the wells. Water at Dekcha bad ; it makes both men and horses ill. Grass and <i>saxaul</i> is to be found in the old bed of the Oxus, which is from 230 to 350 yards wide.
15	AK BUGUT	..	20	332	Ak Bugut lies at the apex of a bend of the old river-bed. It has 13 wells, with good water, but in 1897 they had all silted up and it was necessary to dig them out.
16	SOLAK BAND	..	28	360	Water at Solak Band from a tributary of the Amu Darya.

ROUTE No. 41—*concl'd.*

17	KUNYA URGENCH (NEW URGANJ OF KHWAJA ILI).	14	374	Road through cultivation. Kunya Urgench, a Khivan town, is the commercial centre of the oasis.
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It lies on the Shahabad canal, which is navigable and communicates with the Amu Darya.

## Route No. 42.

FROM KIZIL ARVAT TO KHIVA.

*Authority and date.*—Gedeonof, 1884; Russian 40-verst Map, 1892.

*Epitome.*—360·8 miles in 16 stages. A caravan route, practicable for field artillery and wheeled transport. Water-supply poor. No supplies except *saxaul* for fuel and (in spring only) grazing for camels and horses, until the Khivan oasis is reached at stage 10.

Colonel Markozof's column of 2,200 men with 16 guns and 3,000 camels concentrated at Igdi (stage 3) on April 28th, 1873, and endeavoured to advance on Khiva by this route. He reached Orta Kuyu (stage 5) and was then compelled to retire owing to the heat and want of water. 2,200 camels, and practically all the horses employed, died during the expedition.

*Connections:* at Kizil Arvat, Nos. 32, 33, 34 and 39; at Khatib, No. 40; at Ilyanli, No. 48; at Zimkshir No. 43; and at Khiva, Nos. 44, 45, 46, 47 and 49.

No. of stage.	Names of stages.	DISTANCES.		REMARKS.
		Inter-mediate.	Total.	
1	PURUN ..	21·9	21·9	Road over sandy desert crossing numerous <i>takirs</i> or patches of clay soil. Two wells of fresh water at Purun, depth 37½'. In May 1884, 250 men and 70 animals were watered here and a supply of 1,900 gallons drawn for the next day's march.
2	NAURLI ..	28·6	50·5	Many sand hills are passed. 4 wells at Naurli with brackish water. Unfit for human consumption. Horses drink it with reluctance, camels readily.

ROUTE No. 42—*concl'd.*

3	LOWER IGDI ..	33·6	84·1	Lower Igdi lies in the Uzboi or ancient bed of the Oxus. Three wells, depth 21'. The water of the two most southerly ones is fit for human consumption. Two miles to the north are the wells of Upper Igdi. In March 1873, Markozof's force completely exhausted all the Igdi wells in 2½ days. There is an alternative to stages 1 to 3, <i>vide</i> the wells of Demirjan (Jemerjan) and San-siz; distance about 95 miles.
5	BALA ISHEM ..	34·6	118·7	Pass Upper Igdi and cut across bed of the Uzboi. 5 wells at Bala Ishem, depth 28'. The southernmost is the best; 250 men and 320 animals were easily supplied in May 1884.
5	ORTA KUYU ..	31·3	150	3 wells, 14' deep. Sufficient water was found for the same party. There is a track north from Orta Kuyu to Charishli, <i>vide</i> Route No. 40, stage 12.
6	NEFES KUYU ..	14·9	164·9	2 wells, 35' to 42' deep. Water brackish, but drinkable. It proved just sufficient for the detachment referred to above.
7	DAUDIB ..	14·6	179·5	Road over firmer soil. 2 wells, 28' to 35' deep, at Daudir. The supply is larger than at Nefes Kuyu.
8	KHATIB (KHATIV OR GIAUR KOVO.)	43·8	223·3	A long march. At 30 miles some rough ground is traversed. For Khatib, <i>vide</i> Route No. 40, stage 14.
9 to 16	KHIVA ..	137·5	360·8	<i>Vide</i> Route No. 40, stages 15 to 22.

## Route No. 43.

## FROM BAMI TO KHIVA.

*Authority and date.*—Lessar, 1885; Russian 40-verst Map, 1892; Russian Route Map, 1893.

*Epitome.*—338·4 miles, 13 stages. It will be seen that stages 2, 7, 8 and 9 as given are far too long for a day's march, but no water can be found between the terminal points of these stages; if water could

ROUTE No. 43—*contd.*

be carried, 2 and 9 would each make 2 stages and 7 and 8 make 6 in all; thus the total stages would be 19. A little used caravan route practicable for camel-transport only. Water-supply very bad. No supplies obtainable, except a little grazing in spring.

*Connections*: at Bami, Nos. 33 and 34; at Efrem, No. 40; and at Khiva, Nos. 44, 45, 46, 47 and 49.

No. of stage.	Names of stages.	DISTANCES.		REMARKS.
		Inter-mediate.	Total.	
1	NIJAZ ..	14·6	14·6	Road over hard clay soil; five wells at Niaz. Water 35' below surface; ordinarily fresh, but in summer it smells strongly of sulphur. Quantity not known.
2	SANSIZ ..	33·8	48·4	Road over sand. At 28 miles pass wells of Chotur; water brackish. In 1881 at Sansiz there were 6 wells, with drinkable but brackish water. There is a track from here to Igdi (Route No. 42, stage 3), distance 43 miles.
3	HAOZ BESTEM SHAH.	16·6	65	At Haoz Bestem Shah the wells are now choked up, and there remain only the ruins of a rain-water cistern.
4	KIZIL KATI ..	21·9	86·9	The wells at Kizil Kati fill up after rain. Normally water is found at a depth of 14'.
5	KURTISH ..	8·3	95·2	Kurtish lies in the Uzboi, or ancient bed of the Oxus. It has 2 wells, but their water is salt.
6	ISLAM (ISLAM KUI).	23·9	119·1	Just before reaching Islam, the Unguz, or dry bed of the ancient Charjui Darya, is crossed. No information as to the water-supply at Islam.
7	LOILI (LAILI) ..	71·6	190·7	A long desert stretch. In 1881 the wells of Loili could water 40 horses.

ROUTE No. 43—*conold.*

8	KIZILOHA KUYU-SI.	56·4	247·1	One well at Kizilcha Kuyusi. Water, fresh, 4' below the surface and 3½' deep; supply "abundant."
9	CHAGIL ..	30·5	277·6	Three wells at Chagil; in 1885 silted up. In 1873 water was at a depth of 24½' and 7' deep.
10	ZMUKSHIR ..	13·3	290·9	Cultivation commences near Zmukshir, the first village since leaving Bami. For Zmukshir, <i>vide</i> Route 40, stage 19.
11 to 13	KHIVA ..	47·5	338·4	<i>Vide</i> Route No. 40, stages 20, 21 and 22.

## Route No. 44.

## FROM ASKHABAD TO KHIVA.

*Authority and date.*—Lessar, 1885; Russian Route Map, 1893; French Map,  $\frac{1}{1,000,000}$ , 1901.

*Epitome.*—292·9 miles, 13 stages. A caravan route practicable for field artillery and wheeled transport. Water-supply bad. Supplies *nil*, except a little *saxaul* and grazing.

*Connections* : at Askhabad, Nos. 24, 25, 27, 28, 29 and 34 ; at Bezmein, No. 34 ; at Sagaji, No. 45 ; and at Khiva, Nos. 40, 46, 47 and 49.

No. of stage.	Names of stages.	DISTANCES.		REMARKS.
		Inter-mediate.	al.	
1	BEZMEIN ..	15	15	<i>Vide</i> Route No. 34, stage 7.

ROUTE No. 44—*contd.*

2	SOIU ..	23·2	38·2	At 4 miles the road turns north-west, crosses the Central Asian Railway and enters the desert. 3 wells at Soiu; water 91' below the surface and 3½' deep; drinkable by men.
3	BEK TASH ..	20	58·2	The well at Bek Tash was silted up in 1901.
4	BAKHT ..	28	86·2	Four wells at Bakht. The water, 63' feet below the surface, is brackish and only 7 inches deep. 8 miles to the west lies the well of Kelali, the water of which is fresh; supply unknown.

There is a more direct route (camel-track only) from Askhabad to Bakht; distance 68·6 miles, *via* Kuchan.

5	NAMARD ..	16·6	102·8	Road crosses many <i>takirs</i> , or patches of clay soil. No information as to the well of Namard.
6	YUNGENLI ..	19·9	122·7	Road over sand. No information as to well of Yungeni.
7	KEVJA ..	17·5	140·2	No information as to well of Kevja.
8	MINAR. RUINS OF—	14·6	154·8	Minar has a cistern which contains an "ample" supply of rain-water up to the end of May. There are also some wells, silted up in 1901.

9 MIRZA CHALEH 13·9 168·7 Road crosses the Ungus, or old bed of Charjui Darya, just before reaching Mirza Chaleh. The wells here have a variable supply of water, which lies 21' below the surface. Medemi Khan cleared out these wells in 1873 and supplied several thousand men from them.

10	ZEBD-ADAM-OYUK.	22	190·7	An old fort here. No information as to water-supply. <i>Saxaul</i> for fuel obtainable.
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ROUTE NO. 44—*concl'd.*

11	KHAN OYUK ..	24	214·7	Another old fort. Nothing is known about the water at Khan Oyuk. <i>Saxaul</i> obtainable.
12	SAGAJI ..	35·2	249·9	Two wells at Sagaji; water fresh, 56' below surface and 2½' deep; supply constant.
13	KHIVA ..	43	292·9	Road through sand, covered with thorn bushes and dotted by hillocks. At 41 miles reach the edge of the Khivan oasis and the village of Pishkanik, the first since leaving Bezmein (stage 1).

## Route No. 45.

## FROM MERV TO KHIVA.

*Authority and date.*—Abbott, 1840; Russian 40-verst Map, 1892; French Map,  $\frac{1}{1,000,000}$ , 1901.

*Epitome.*—283 miles, 11 stages. A caravan route, practicable for field artillery and wheeled transport, with the exception of stages 8, 9 and part of 10, which are practicable for camels only. This is apparently the road known as the *Rah-i-Chashma*. Turkomans using horses only did the distance in 6 days (1840). There is no exact information as to the water obtainable from the wells on this route, but the general supply is probably poor. No supplies, except *saxaul* and grazing, which are found in fair quantities in the spring.

*Connections* : at Merv, Nos. 6, 7, 11 and 19; at Sagaji, No. 44; and at Khiva, Nos. 40, 46, 47 and 49.

No. of stage.	Names of stages.	DISTANCES.		REMARKS.
		Inter-mediate.	Total.	
1	KARA AGACH ..	35	35	Road through oasis of Murghab river. Kara Agach is the last village on the road.



ROUTE No. 45—*concl'd.*

2	YAZI KEL ..	16	51	Road passes grove of Tar-khan and then enters the Kara Kum desert.
3	CHUNGURLI ..	12	63	Many sand hills passed. One well at Chungurli.
4	CHASHMA ..	17	80	One well here.
5	KHAN KUYU ..	15	95	One well at Khan Kuyu. A camel track leads south-west from here to the Tejen oasis. <i>Vide</i> Route No. 19, stage 5.

6	MURZEH ..	40	135	A long stage; one well at Murzeh.
7	DASH AJI (DASH HAJI).	27	162	At about 20 miles cross the Ungus, or old bed of the Charjui Darya. There is sometimes water in it at

this point; 2 wells at Dash Aji, and a rain-water cistern, 2 miles to the south-west.

8	BABAZARDA DAJ	12	174	One well.
9	KHAN KUI ..	50	224	The water here was fresh, but the well was silted up in 1892.
10	SAGAJI ..	16	240	At 5 miles joins Route No. 44, stage 12.
11	KHIVA ..	43	283	<i>Vide</i> Route No. 44, stage 13.

## Route No. 46.

FROM CHARJUI TO KHIVA.

*Authority and date.*—Byelyavski, 1885; Russian 40-verst Map, 1892; Russian Route Map, 1893.

*Epitome.*—275·3 miles, 18 stages. By the steamers of the Amu Darya Flotilla the distance from Charjui to Urgench (or New Urganj, 20 miles east of Khiva) is 293·3 miles. The road, which follows the left bank of the Amu Darya, is practicable for field artillery and wheeled transport. Water-supply good. Forage and fuel abundant throughout. Stages 1 to 3, 6, and 15 to 18 pass through rich cultivation, but owing to the increasing area under cotton, the quantity of wheat surplus to the requirements of the inhabitants is now very small.

Jefferson in 1899 drove from Hazar Asp (stage 15) to Charjui by *tarantass* in five days.

A telegraph line runs from Charjui to Petro-Alexandrorsk.

*Connections:* at Charjui the service of the Amu Darya Flotilla up stream to Termez and other river stations, Nos. 1 and 6, and routes in Russian Central Asia, Section II; at Khiva, Nos. 40, 44, 45, 47 and 49.

No. of stage.	Names of stages.	DISTANCES.		REMARKS.
		Inter-mediate.	Total.	
1	OMAR KHWAJA (OMER KHOJA).	13·3	13·3	The road runs through the cultivated strip about 10 miles wide between the left bank of the Amu Darya and the Kara Kum desert. At 6 miles pass the astronomical station of Charjui which lies to the east of the road. There is a camping-ground near the village of Omar Khwaja in the grove of Said Ata.
2	DENAU (BAZAR DENAU).	17·9	31·2	
3	HASAN TASH (ISEN TAT).	17·9	49·1	The cultivated strip is now considerably narrower.
4	IST POS ..	11·9	61	The road crosses a <i>takir</i> . There is a ferry across the Amu Darya opposite the village of Ist Pos. Water from a canal.

ROUTE No. 46—*contd.*

5	SEN RABAT ..	13·9	74·9	There are only ruins at Sen Rabat; the camp is in a dry open space near them.
6	TURPAK KALA..	13·9	88·8	At 8 miles pass the long straggling village of Kabakti, opposite which there is a ferry across the Amu Darya. Camp in a grove at Turpak Kala.
7	DAYA KHATIN KALA.	15·9	104·7	At 13 miles the road passes the village of Dunguz Togai. The ruins of Daya Khatin Kala still afforded good shelter in 1885.
8	GUGERJELI ..	14·6	119·3	The camp at Gurgan Ata passed <i>en route</i> is between the road and the river bank. Water from stream falling into the Amu Darya.
9	DARGAN ATA ..	13·9	133·2	Some sandhills are passed on this stage. There is a post and telegraph office at Dargan Ata. The employes get their supplies from Petro-Alexandrovsk or Charjui. On the river, $4\frac{3}{4}$ miles away, a floating oil reservoir is maintained for the use of the steamers of the Amu Darya Flotilla. The hamlet of Dargan Ata gets its water from a canal.
10	TUGAI GEGEK- RAN.	19·2	152·4	At Ak Robat (about 9 miles) branches off the direct road to Pitnyak (stage 14) across the desert <i>via</i> Yangi Ja. It is $4\frac{1}{2}$ miles shorter than the main road, which continues to follow the river bank. No village at Tugai Gegekran. Camp on bank of Amu Darya.
11	KUM ALAKLI ..	14·9	167·3	No cultivation. Camp between road and river.
12	DANISHAHR (DANISHER).	14·9	182·2	There are some ruins and a village at Danishahr, which is south of the gorge of Dul-Dul. Camp on high river bank.

ROUTE No. 46—*concl'd.*

13	SADIVAR ..	14·9	197·1	Pass the tomb, called Hazrat Ali, and at 12 miles the village of Chash Kala. 2 companies, a squadron or battery could find shelter in the ruins of an old fort, near the village, which has about 500 inhabitants.
14	PITNYAK (PIT- NIAK).	21·9	21·9	The road at 7 miles passes over a ridge with steep slopes. Pitnyak is a straggling village of at least 3,000 inhabitants.
15	HAZAR ASP (KHAZAR ASP).	15·2	234·2	The road crosses numerous canals and passes some marshes. Hazar Asp is a walled town of about 4,000 inhabitants.
16	BAGAT ..	15·2	249·4	Road passes through continuous cultivation, and inclines westwards away from the river, from which Bagat is 7 miles distant.
17	YANGI ARIK ..	13·3	262·7	Road passes through continuous cultivation in this and the next stage.
18	KHIVA ..	12·6	275·3	For Khiva, <i>vide</i> Route No. 40, stage 22.

## Route No. 47.

FROM KHIVA TO KUNGRAD (KANGRAD) *viâ* KHOJELI.

*Authority and date.*—Kostenko, 1873; Russian Route Map, 1893; Russian 40-verst Map, 1899.

*Epitome.*—171·7 miles, 11 stages. Practicable for field artillery and wheeled transport, except in summer, when the low-lying country which the road traverses along the left bank of the Amu Darya becomes flooded. Water-supply good. Rich cultivation in stages

ROUTE No. 47—*contd.*

1 to 7; but large supplies of wheat are not obtainable, as much of the soil is under cotton. Forage and fuel abundant throughout.

An alternative route, generally used in summer, is *viâ* Kunya Urgench, *vide* Route No. 48. Another alternative branches off at stage 5, crosses the Amu Darya, passes through Kipchak (*vide* Section II) and rejoins at Khojieli.

The Amu Darya is navigable for steamers both from the Aral Sea and from Charjui to Kungrad. The Amu Darya Flotilla, however, only plies as far as Urgench, 21½ miles below Petro-Alexandrovsk.

On May 26th, 1873, Veryovkin's column from Orenburg and Lomakin's from Kinderli Bay concentrated at Kungrad, whence the combined force, strength 3,750 men, with 10 guns, advanced on Khiva by the road described below.

Veryovkin's column had taken 44 days to reach Kungrad *viâ* the Ust Urt from Fort Emba, about 250 miles south-east of Orenburg. For Lomakin's route, *vide* Route No. 54.

*Connections:* at Khiva, Nos. 40, 44, 45, 46 and 49; at Yani Kala, No. 48; and at Kungrad, Nos. 50 and 54.

No. of stage.	Names of stages.	DISTANCES.		REMARKS.
		Inter-mediate.	Total.	
1	KOSH KUNIR (KUSH KUPIR OR KHAIVAT).	11·3	11·3	Road through the cultivation of the Khivan oasis. At 5 miles cross a tributary of the Amu Darya. Kosh Kunir is a walled town on the Kazavat canal.
2	GUBLEN ..	17·7	29	At 11 miles pass the town of Kyat (Kait). Gurlen, about 4,000 houses, is an important trading centre, about 4 miles west of the Amu Darya.
3	KATAI (KITAI)..	15	44	The road crosses several streams which fall into the Amu Darya. The village of Katai stands on a canal and is 3¼ miles from the bank of the Amu Darya.

ROUTE No. 47—*concl'd.*

4	MANGIT ..	10	54	The town of Mangit is on the Boz-Su canal.
5	KIPCHAK ..	10	64	Kipchak lies on the river bank and has an old citadel and about 120 houses. The inhabitants of the surrounding district rear cattle.
6	JULAIGACH CHIGANAK.	20·3	84·3	Down the left bank of the Amu Darya and cross the Laudan canal. Julaigach Chiganak is a hamlet on the bank of the river.
7	KHOJEILI .. (KAWAJAILI).	19·2	103·5	At 13 miles pass the village of Janga-Verdi-Bai, Khojeili has about 300 shops and does a considerable trade in dried fish. Nukus ( <i>vide</i> Section II) lies opposite, on the right bank of the Amu Darya. There is a cart-road, 19 miles in length, from Khojeili to Kunya Urgench ( <i>vide</i> Route No. 41, stage 17).
8	KARA BAILI ..	20·2	123·7	Road through marshy country. The hamlet of Kara Baili lies on a canal.
9	YANI KALA .. (JAN KALA).	20	143·7	Yani Kala lies on the Shumanki canal.
10	KOS TEREK ..	20	163·7	Road through jungle.
11	KUNGRAD .. (KANGRAD).	9	171·7	Kungrad lies on the Taldik, a tributary of the Amu Darya and has a population of from 7,000 to 10,000.

The wharf lies 1 mile from the town. The surrounding district is fertile; rice and barley are grown and cattle reared. The garrison of Kungrad is 1 Sotnia of Cossacks.

## Route No. 48.

FROM KHIVA TO KUNGRAD (KANGRAD) *viâ* KUNYA URGENCH.*Authority and date.*—Lansdell, 1882; Russian 40-verst Map, 1899.

*Epitome.*—191 miles, 12 stages. An alternative, generally used in summer, to Route No. 47. Practicable for field artillery and wheeled transport. Water-supply good. Cultivated country is traversed in stages 1 to 7, but little wheat is obtainable. No supplies, except fuel and forage, in remaining stages.

*Connections :* at Khiva, Nos. 44, 45, 46, 47 and 49; at Zmukshir No. 43; at Ilyanli, No. 40; at Kunya Urgench, Nos. 41 and 51; at Yani Kala, No. 47; and at Kungrad, Nos. 50 and 54.

No. of stage.	Names of stages.	DISTANCES.		REMARKS.
		Inter-mediate.	Total.	
1 to 4	ILYANLI (ILIALI)	57·5	57·5	<i>Vide</i> Route No. 40, stages 19 to 22.
5	AK TYUBE ..	19·5	77	For the first half of the road there is much cultivation; for the second half it is scanty. Ak Tyube is a village, with a few shops.
6	MANTIK UI ..	11	88	At 8 miles cross the Shah Murad canal. Mantik Ui is a Turkoman village.
7	KUNYA URGENCH (NEW URGANJ or KHWAJA ILI).	15	103	Two canals are crossed on this stage. For Kunya Urgench, see Route No. 41, stage 17.
8 and 9	YANI KALA ..	40	143	These stages lie through marshy jungle. No villages.
10 to 12	KUNGRAD (KANGRAD):	48	191	<i>Vide</i> Route No. 47, stages 9, 10, and 11.

## Route No. 49.

FROM PETRO-ALEXANDROVSK TO KHIVA.

*Authority and date.*—Russian 40-verst Map, 1899; Jefferson, 1899.

*Epitome.*—35 miles, 2 stages. Practicable for field artillery and wheeled transport.

Petro-Alexandrovsk is a Russian fort (normal garrison, 1 battalion and a Sotnia of Cossacks) and settlement on the right bank of the Amu Darya.

*Connections:* at Petro-Alexandrovsk, Routes in Russian Central Asia, Section II, and at Khiva, Nos. 40, 44, 45, 46, 47 and 49.

No. of stage.	Names of stages.	DISTANCES.		REMARKS.
		Inter-mediate.	Total.	
1	KHANKI (KHANKA)	15	15	The Amu Darya, which is dotted with islands and about 2 miles wide opposite Petro-Alexandrovsk, is crossed in flat-bottomed boats. Jefferson took 5 hours to reach the left bank. The road, with high mud walls on each side ascends from the left bank through cultivation to Khanki, a Khivan town with many cotton factories.
2	KHIVA ..	20	35	
into Khiva is in ruins; the walls are from 70' to 80' high, <i>vide</i> Route No. 40, stage 22.				

## Route No. 50.

FROM MYORTVI KULTUK (TSAREVICH) BAY TO KUNGRAD (KANGRAD).

*Authority and date.*—Byelyavski, 1883; Russian Route Map, 1893.

*Epitome:*—279.6 miles, 16 stages. Practicable, with slight improvements in stages 1, 12 and 14 for field artillery and wheeled transport. The water-supply is sufficient for 400 men. No supplies,



ROUTE No. 50—*contd.*

except grazing, which is good, and occasional patches of *saxaul* for fuel. The cold on the Ust Urt plateau is, in winter, intense. General Perovsk's expedition, which in 1839 attempted to reach Khiva from Orenburg, lost 8,500 camels, out of 10,000 employed, on the northern portion of the Ust Urt.

There is a small settlement on the shores of Myortvi Kultuk (Tsarevich) Bay near the well of Chegin. The "Russian Transport Company" has constructed a wooden pier, 560' long, and had in 1883 a *depôt* for cotton forwarded by this route from the Khivan oasis.

The stages of an alternative route shown in the Russian Route Map, 1893, are appended. It is 7 miles, or 1 stage, longer than the first alternative described above.

*Connections* : at Tyanke, No. 56; at Ir Basan, No. 54; and at Kungrad, No. 47.

No of stage.	Names of stages.	DISTANCES.		REMARKS.
		Inter-mediate.	Total.	
1	TYANKE (TANKE)	16·2	16·2	The road starts from the well of Chegin. At 4 miles it commences to ascend to the plateau of Ust Urt, the edge of which is reached at 8 miles. Laden <i>arbas</i> have to be pushed up with the assistance of men at one point. The well of Tyanke is 70 feet deep with 7 feet of good fresh water.
2	TURLUGUL ..	14·6	30·8	There are 2 wells, 42' and 35' deep. The water of the deeper one is fit for cattle only, that of the other is suitable for human consumption.
3	JANGAS CHIN - GRAU.	13·6	44·4	At 10 miles pass the 7 wells of Kara Bayats. Their water is slightly brackish. 20 <i>kibitkas</i> of Adæf Kirghiz, with large herds, live here for 9 months of the year. The well of Jangas Chingrau is 35' deep, and has 7' of fresh water.
4	CHIKTI KARILGAN	15·2	59·6	From 2½ to 10 miles the road passes through <i>saxaul</i> . The 2 wells of Chikti Karilgan lie under a hillock. They are both 31½' deep, with 3' of fresh water.

ROUTE No. 50—*contd.*

5	TASIK TAS ..	13.8	73.4	At 5.3 miles pass the well of Kara Chingrau (Janti). Well of Tasik Tas is 63' deep. Its water is drinkable, though it has a slight smell of sulphur.
6	BISH CHINGBAU	11.9	85.3	More <i>saxaul</i> is passed on this stage. The 5 wells at Bish Chingrau are 38½' in depth, with 7' of water.
7	UITI .. ..	15.2	100.5	For 4 miles through <i>saxaul</i> , then over bare plain. One well at Uiti, 77' deep, with a "good" supply of fresh water.
8	METER ..	17.7	118.2	At 11.3 miles the fresh water well of Karimsak. The well at Meter is 79' depth of 3½' of fresh water.
9	BIGBAN ..	20.9	139.1	At 10 miles the fresh water well and tomb of Kurluk. The well of Bigran, round which there are often Adaef encampments, is 75' deep and has clear and fresh water.
10	KUL BAI ..	19.9	159	At 10 miles the well of Jildush, 63' deep, with fresh water. The well of Kul Bai, 72' deep, is said to be the best on the whole Ust Urt plateau.
11	TORCHA TYULEI	25.9	184.9	At 10 miles enter the wood of Torcha Tyulei which extends as far as Ir Basan (stage 12). There is said to be a line of wells (Naiza, Kara Mulu and Tash Chingrau) between Kul Bai and Torcha Tyulei.

Byelyavski marched without finding water. Two wells at Torcha Tyulei. Their depth is 17½' with 3½' of water. The latter is brackish and fit for cooking and making tea only.

ROUTE No. 50—*concl'd.*

12	IR BASAN ..	12·6	197·5	The road passes over many swells of the ground. Some of the hollows would be difficult after the melting of the snow. 2 small ravines, 4 $\frac{3}{4}$ ' deep by 14' wide, are crossed on this stage. They could easily be filled with <i>saxaul</i> to allow carts to pass. The 2 wells of Ir Basan lie in the valley of the same name. They are 16' deep, with 5' of brackish water fit only for cooking and tea. Horses drink it readily. Grazing on the sides of the valley, but not round the wells.
13	ALI BEK ..	25·2	222·7	At 8 miles pass an outstanding hill and at 16, the 2 wells of Kara Kuduk, which furnish water fit for animals only. The well of Ali Bek is 21' deep, with 7' of brackish water, fit for cooking and tea only.
14	KARASH BAI KAZGAN	28·5	251·2	At 20 $\frac{1}{2}$ miles descend from the Ust Urt plateau. <i>Arbas</i> must be taken down with care. The 2 wells of Karash Bai Kazgan are 17 $\frac{1}{2}$ ' deep with 3 $\frac{1}{2}$ ' of water. This has a smell of sulphur, but is fit for cooking and tea.
15	LAKE OF IRALI KHACH KHAN.	12·9	264·1	Road through reeds. Abandoned canals are met with and 2 fresh water lakes are passed. The fresh water lake of Irali Khach Khan is about 300 yards in diameter. Large flocks of sheep and herds of cows find grazing in the neighbourhood.
16	KUNGRAD (KANGRAD).	15·5	279·6	At 4 $\frac{1}{2}$ miles the cultivation of the village of Im Kala commences. Cultivation is thence continuous to Kungrad, for which <i>vide</i> Route No. 47, stage 11.

*Alternative route.*—No information is available regarding this road beyond the fact that it is said to be fit for vehicles, and to have pasture for both camels and horses. Total distance 286·9 miles, 17 stages.

*Stages.*—1. Koi Su, 12·9; 2. Bigish, 19·9; 3. Chakkan, 22·5; 4. Cholaran, 15·9; 5. Bish Chingrau (*vide* stage 6 above), 15·9; 6. Bik Bau, 13·9; 7. Kadir Bai, 19·9; 8. Argan Bai, 16·6; 9. Jacoul Bai, 10·6; 10. Chili, 17·2; 11. Barli Bai, 15·2; 12. Saxauldi, 13·2; 13. Nasambek, 9·9; 14. Uch Kuduk, 19·2; 15. Tscheshorpa, 32·2; 16. Urpaya, 19·2; 17. Kungrad, 12·6.

## Route No. 51.

FROM FORT ALEXANDROVSK TO KUNYA URGENCH (NEW URGANJ OR KHWAJA ILI).

*Authority and date.*—Stumm, 1873; Russian Route Map 1893; Nasibyanets, 1900.

*Epitome.*—473 miles, 28 stages. A caravan track, practicable with slight improvements for field artillery and wheeled transport. Water-supply good in spring in stages 1 to 7, but in other seasons of the year, poor; and in remaining stages bad at all times. No supplies obtainable except forage and fuel (*saxaul*) in spring. Lomakin's force followed stages 11 to 24 in May 1873, *vide* Route No. 54. To stages 1 to 2 there is an alternative which runs north of the Kara Tau Range. It is about 30 miles shorter, and more difficult, than the main road.

*Connections:* at Fort Alexandrovsk steamer communication with Krasnovodsk and Astrakhan, 400 and 180 miles, respectively, and Nos. 52 and 55; at Ilteje, No. 54; and at Kunya Urgench, Nos. 41 and 48.

No. of stage.	Names of stages.	DISTANCES.		REMARKS.
		Inter-mediate.	Total.	
1	KHANGA BABA	16·6	16·6	General direction east-south-east. The road traverses flat country.
2	KSHITIN ..	13·9		
			30·5	The road enters hilly country, and up to stage 7, inclusive, runs at the foot of the Kara Tau Range. A
3	TALCHIK ..	29·2	59·7	Road as described above to stage 7.
4	BURDUGEN ..	19·9		
			79·6	....

ew nomads are met; they cultivate sufficient wheat, barley, etc., or their own use, and rear horses, camels, goats and sheep.

ROUTE No. 51—*contd.*

5	KAGEN ..	11.3	90.9	....
6	SOUGAT SU ..	22.5	113.4	....
7	BURKU ..	22.5	135.9	....
8	TURUM ..	8	143.9	The road leaves the Kara Tau Range on this stage.
9	SUMSA ..	34.8	178.7	....
10	SINEK (SENEK)	8	186.7	There was a well of brackish water at Sinek in 1873.
11	BISH AKTI ..	10.2	196.9	Six wells here, each about 9 feet deep (1873).
12	ASOHE KUDUK..	14.6	211.5	....
13	SAI KUYU ..	8.3	219.8	There is a well at Sai Kuyu. Lomakin's force marched from Bish Akti to Sai Kuyu <i>vid</i> the wells at Kamisti and Karashchik.
14	BOSAGA.(BUSSA- GA).	18.6	238.4	There is a well at Bosaga.
15	KABA KIN ..	13.3	251.7	The road ascends to the plateau of the Ust Urt; here about 400' feet above the plain.

ROUTE No. 51—*concl'd.*

16	KINIR ..	13·3	265	On two occasions in 1873 the water in the well of Kinir fell so low (below 100' from the surface) that detachments nearly perished.
17	UZUN ..	7·3	272·3	....
18	AK MECHET ..	20·0	292·3	A well at Ak Mechet.
19	ILTEJE (ELTER- JA).	10·6	302·9	There are 2 wells at Ilteje.
20	BAILYAB (BAIL- AB).	13·6	316·5	One well.
21	KIZIL AIGIR (KIZIL AKIR).	5·6	322·1	....
22 and 23	BAI CHAGIR ..	38·4	360·5	....
24	TABIN SU (TA- BAN SU).	22·5	383	The well here contains sul- phate of soda and lime.
25 and 26	ABUGIR (AIBU- GIB).	44	427	....
27 and 28	KUNYA UR- GENCH (NEW URGANJ or KHWAJA ILI).	46	473	For Kunya Urgench, <i>vide</i> Route No. 41, stage 17.

## Route No. 52.

FROM FORT ALEXANDROVSK TO KRASNOVODSK *via* THE STRAITS OF KARA BUGHAZ.

*Authority and date.*—Caspian Sea Sailing Guide, 1884; Russian Route Map, 1893.

*Epitome.*—444·4 miles, 31 stages. A camel track which probably requires only slight improvements to render it practicable for field artillery and wheeled transport. The straits of Kara Bughaz are crossed by ferry in stage 24. The road follows the sandy and sparsely inhabited eastern shore of the Caspian Sea. There are no springs: water, generally brackish, is drawn from wells. No supplies except grazing and scrub for fuel.

There is steamship communication between Fort Alexandrovsk and Krasnovodsk; the steamers of the Caucasus and Mercury Company occasionally visit Fort Alexandrovsk. (Universal Calendar, 1908.)

For a route, in part alternative, running to the east of the Kara Bughaz Gulf, *vide* Route No. 53.

*Connections:* at Fort Alexandrovsk by steamer with Astrakhan, distant 180 miles, and Nos. 51, 55 and 56; at Porsu Burun, Nos. 53 and 54; and at Krasnovodsk by steamer with Caspian ports and Nos. 39, 40 and 52.

No. of stage.	Names of stages.	DISTANCES.		REMARKS.
		Inter-mediate.	Total.	
1	ASAN ..	11	11	....
2	SAGA KUBUK ..	19·6	30·6	....
3	SAURA ..	15·9	46·5	....
4	KARA YALCHA..	21·2	67·7	....

## ROUTE No. 52—contd.

5	SABAZ ..	14·2		....
			81·9	
6	BACHI KULTUK	13·3		....
			95·2	
7	KIZIL JAR ..	11·3		The road leaves the coast
			106·5	of the Caspian, which it
				touches again near stage 9.
8	SAGDI ..	25·9		....
			132·4	
9	YAR JAGAS ..	21·2		There is an alternative to
			153·6	stages 8 and 9 <i>via</i> Kum
				Gingrau on the coast of
				the Caspian, distance 49
				miles, 4 stages.
10	KOK TASH ..	31·8		....
			185·4	
11	ARAK ..	19·9		....
			205·3	
12	PORSU BURUN..	15·9		Porsu Burun lies on Kinderli
			221·2	Bay. There are some wells
				of good water here, made
				by nomads. In 1884 they
				were partly filled up.
13	KARA SENGIB ..	12·2		....
			233·4	
14	KABAKHTI ..	6·6		....
			240	
15	ARGAIB ..	14·6		....
			254·6	
16	KOSH AJI ..	19·9		....
			274·5	
17	KARA YALCHIK	15·9		....
			290·4	
18	SUE ..	8		....
			298·4	
19	KARA SENGIB ..	15·2		....
			313·6	
20	KUI MAT ..	10·6		The road here becomes a
			324·2	mere track.
21	TIULDUL ATA ..	6·6		....
			330·8	
22	TAMDIB ..	9·9		....
			340·7	



ROUTE No. 52—*concl'd.*

23	UJAK ..	13·9	354·6	....
24	KARA BUGHAZ	6	360·6	The minimum width of the straits of Kara Bughaz is 250 yards; depth of water on the Bar, 4 feet. Ferry boats ply across; no information is available as to their capacity.
25	CHUNGUL ..	13·3	373·9	
26	IKE KUI ..	4·6	378·5	....
27	KARA KUI ..	11·9	390·4	....
28	YAILAJI ..	9·9	400·3	There is a track from here to Yazı Gishem, Route No. 40, stage 3. Distance, 54 miles, 3 stages.
29	SHI KUDUK ..	13·3	413·6	....
30	BURNAK ..	18·2	431·8	....
31	KRASNOVODSK	12·6	444·4	<i>Vide</i> Route No. 39, Epitome.

## Route No. 53.

FROM FORT ALEXANDROVSK TO KRASNOVODSK *via* TUAR.*Authority and date.*—Russian Route Map, 1893.*Epitome.*—607·1 miles, 29 stages. A desert camel track, regarding which there is little information. Alternative in part to Route No. 52.*Connections:* at Fort Alexandrovsk by steamer with Astrakhan and Krasnovodsk and Nos. 51, 55 and 56; at Porsu Burun, No. 52; at Bish Gurli, No. 54; at Tuar, No. 40; and at Krasnovodsk by steamer with Caspian ports and Nos. 39 and 52.

No. of stage	Names of stages.	DISTANCES.		REMARKS.
		Inter-mediate.	Total.	
to 12	PORSU BURUN	221·2	221·2	<i>Vide</i> Route No. 52, stages 1 to 12.

ROUTE No. 53—*concl'd.*

13	YAZ GURLI (YAZ GURLA).	28·7	249·9	The road leaves the shore of the Caspian Sea and runs east.
14	BISH GURLI (BISH GURLA).	11·9	261·8	Bish Gurli is a salt lake. <i>Vide</i> Route No. 54, stage 2.
15	CHULAN TAM ..	25·2	287	....
16	SAK SOB KUI	16·6	303·6	The road turns south and crosses the sands of Karin Yarik.
17	SUMBE ..	13·9	317·5	There is a track from Sumbe to Kum Sebshem, Route No. 40, stage 9. Distance 137 miles, 9 stages.
18	KIZIL KARI SHAGLI.	22·8	340·3	....
19	KIZIL KARAKIN	33·8	374·1	The road runs along the eastern shore of the Kara Bughaz.
20	KIZIL BOZ KHUN	24·6	398·7	....
21	MIKSUIT ..	40·4	439·1	....
22	TUAB ..	30·5	469·6	The road leaves the shore of the Kara Bughaz.
23 to 29	KRASNOVODSK	137·5	607·1	<i>Vide</i> Route No. 40, stages 1 to 7.

## Route No. 54.

FROM KINDERLI BAY (PORSU BURUN) TO KUNGRAD  
(KANGRAD).

*Authority and date.*—Stumm, 1873; Trans-Caspia, 1882 to 1890.

*Epitome.*—343·7 miles, 18 stages. A caravan road, practicable for field guns and probably for wheeled transport. Water-supply bad. No supplies, except a little grazing and fuel.

ROUTE No. 54—*contd*

Lomakin's column (about 2,000 men, with 10 guns, advanced in three detachments practically by this road in April 1873. The column nearly perished from want of water, but succeeded in reaching Kungrad in time to take part in the capture of Khiva.

*Connections:* at Kinderli Bay, No. 52; at Bish Gurli, No. 53; at Ilteje and at Tabin Su, No. 51; at Ir Basan, No. 50; and at Kungrad, No. 47.

No. of stage.	Names of stages.	DISTANCES.		REMARKS.
		Inter-mediate.	Total.	
1	YAZ GURLI (YAZ GURLA).	28·7	28·7	The road runs east from Kinderli Bay. <i>Vide</i> Route No. 53, stage 13.
2	BISH GURLI (BISH GURLA).	11·9	40·6	Bish Gurli is a salt lake.
3 and 4	CHOLAK TAM (TAMDI).	33	73·6	There is a well at Cholak Tam.
5	KINDERLI ..	30	103·6	....
6 and 7	ILTEJE (ELTERJA)	43	146·6	....
8 to 12	TABIN SU (TABAN SU).	80·1	226·7	<i>Vide</i> Route No. 51, stages 20 to 24.
13	ALAN ..	13	239·7	The so-called wells at Alan consist of 7 volcanic fissures 42' to 63' wide, and 49' to 56' deep, in the vicinity of the ruins of a Russian Fort built by Prince Bekovich in 1717.
14	IR BASAN ..	20	259·7	Water at Ir Basan salt and almost undrinkable.
15	KARA KUDUK ..	16	275·7	No good water on this, or stages 16 and 17, until Karasuk is reached.

ROUTE No. 54—*concl'd.*

16	LAKE ABUGIR ..	29	304·7	The lake was dry and troops marched across it in 1873; the bed of the lake was covered with reeds, 15' to 20' high and undergrowth.
17	KARASUK ..	16	320·7	There is a well at Karasuk at which point begins the cultivation of the Khivan oasis.
18	KUNGRAD (KANGRAD).	23	343·7	<i>Vide</i> Route No. 47, stage 11.

## Route No. 55.

FROM FORT ALEXANDROVSK TO JIDELI.

*Authority and date.*—Trans-Caspia, 1882 to 1890; Russian 40-verst Map, 1900.

*Epitome.*—172·1 miles, 10 stages. Practicable for field artillery and wheeled transport. Water-supply bad. No supplies.

In winter caravans cross from Jideli to the other side of Myortvi Kultuk (Tsarevich) Bay on the ice.

*Connections:* at Fort Alexandrovsk by steamer (*vide* Route No. 52, *Epitome*) and Nos. 51, 52 and 53; at Khanga Baba, No. 51; and at Tubejik, No. 56.

No. of stage.	Names of stages.	DISTANCES.		REMARKS.
		Inter-mediate.	Total.	
1	KHANGA BABA	16·6	16·6	<i>Vide</i> Route No. 51, stage 1.
2	TUBEJIK ..	10	26·6	....
3	BURLI ..	13	39·6	....
4	KUNAN SU ..	13	52·6	The road runs along the shore of the Bay of Sari Tash.
5	TUE SU (TYUE SU).	20	72·6	The road runs along the shore of the Bay of Kochak. There is a well at Tue Su.

## ROUTE No. 55—concl'd.

6	KOCHAK (KOSHAK)	16·5	89·1	Road continues along shore of Bay. A well at Kochak.
7	KAZBA (AIRASH)	20	109·1	The road runs for the remaining stages across the Peninsula of Buzachi.
8	MYASTEK ..	20	129·1	....
9	KIZAN (KAZAN)	20	149·1	There are wells of good water at Kizan.
10	JIDELI ..	23	172·1	The well of Jideli is 9 miles from the shore of the Caspian.

## Route No. 56.

FROM FORT ALEXANDROVSK TO TYANKE (TANKE)!

*Authority and date.*—Trans-Caspia, 1882 to 1890.

*Epitome.*—264·6 miles, 16 stages. A caravan track, practicable for camels, impracticable for field artillery and wheeled transport. Water-supply poor, especially in stages 11 to 16. The first 10 stages traverse country inhabited by nomad Adaefts. At stage 13 the plateau of the Ust Urt is reached.

From Tyanke the track continues on for 7 marches more (117 miles) to Bakasht on the river Emba.

The Russian 40-verst Map, 1894, shows a road, alternative to stages 3 to 11, practicable for wheeled transport. It terminates at Kokti Kuyu, 21 miles, from Karatie (stage 12) and 140 miles from Fort Alexandrovsk.

*Connections* : at Fort Alexandrovsk by steamer (*vide* Route No. 52, *Epitome*) and Nos. 51, 52 and 55 ; at Khanga Baba, No. 51 ; at Tubejik, No. 55 ; and at Tyanke, No. 50.

No. of stage.	Names of stages.	DISTANCES.		REMARKS.
		Inter-mediate.	Total.	
1	KHANGA BABA	16·6	16·6	<i>Vide</i> Route No. 51, stage 1
2	TUBEJIK ..	10	26·6	<i>Vide</i> Route No. 55, stage 2.

ROUTE No. 56—*concl'd.*

3	TENGEZIK ..	13	39·6	The road enters the foot hills of the Kara Tau Range.
4	UDYUK ..	10	49·6	....
5	TABTALI ..	10	59·6	....
6	ULANAK ..	16·5	76·1	....
7	JANGILDI ..	10	86·1	....
8	TUSHCHUBEK ..	20	106·1	....
9	CHEPE ..	23	129·1	....
10	AUSAR ..	13	142·1	....
11	KURKEBEUKTI	16·5	158·6	The road leaves the Kara Tau mountains and passes over sandy desert.
12	KARATIE (KARATBE).	33	191·6	The steep ascent to the Ust Urt is made.
13	UTYAS ..	20	211·6	....
14	ISHKEKIRGAN ..	20	231·6	....
15	KATSHOHA ..	13	244·6	....
16	TYANKE (TANKE)	20	264·6	Tyanke is stage 1 of Route No. 50.

