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appendix 18

Appendix (18)

United States
Department of the Interior
Geological Survey

COMPILATION OF HYDROLOGIC DATA,

HELMAND RIVER VALLEY, AFGHANISTAN

THROUGH SEPTEMBER 1960

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Prepared by the United States Geological Survey
in cooperation with
the Helmand Valley Authority of the Royal Government of Afghanistan
and
the United States Agency for International Development
Mission to Afghanistan

Kabul, Afghanistan
March 1964

Open File Report

REPORT DOCUMENTATION PAGE

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14. ABSTRACT

The purpose of this report is to summarize briefly the history of the Surface Water Research project since its inception in 1952, the work accomplished, and the problems encountered. In general, each topic is discussed under two periods of time: 1952-1963, when projects were confined to the Helmand River Valley and was entitled "Helmand Surface Water Investigations (306-12-021, 306-M-12-AD and 306-AC-12-AD5)," and 1963-1969 when activities were expanded to cover most of Afghanistan and title was changed to "Surface Water Research (306-11-190-002)".

Prepared by the United States Geological Survey in cooperation with the Water and Soil Survey Department, Ministry of Agriculture and Irrigation, Royal Government of Afghanistan under the auspices of the United States Agency for International Development.

15. SUBJECT TERMS

Afghanistan. Drainage. Flood control. Helmand River Project. HVA. Helmand Valley Authority. Hydrology. Hydropower. Irrigation. Lashkar Gah. Rainfall Runoff Calculations. Sediment. Stream-flow Data. Stream gaging stations. Stream measurements. Surface Water. Water supply.

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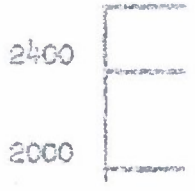
ADDENDA

(To be attached to Compilation of Hydrologic Data, Helmand River Valley, Afghanistan through September 1960).

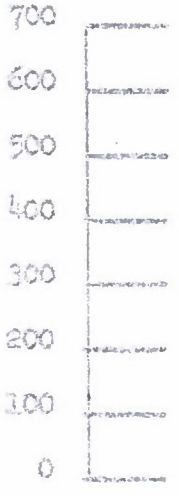
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Appendix 18

Page 8-Delete entire page. Discharges shown are those for the gaging stations named but are not adjusted for change in reservoir contents.

Page 9-Change ordinate of upper graph above break in scale to read:



Change ordinate of lower graph to read:



Page 11-In the table in the Extremes paragraph the minimum discharge for water year 1957 should read, "Dec. 28, 1956 2,210".

Page 17-Underline the discharge on May 31 and August 25.

Page 21-In the Extremes paragraph the minimum discharge for water year 1958 should be footnoted "e".

Page 22-Delete the underline below 863 on March 24. The record for station below Kajakai Dam (unregulated on that date) shows the minimum probably occurred earlier in the month.

Page 25-Underline 420 on January 6.

Page 26-Underline 4,260 on March 5.

Page 28-Underline the discharge on October 1, 15 and May 2.

Page 29-Delete the underline below 260 on October 1, below 270 on October 21, and below 280 on November 1. These are flat estimates of discharge and probably bear no relation to the actual occurrence of the extremes

Page 33-The peak reservoir elevations are inaccurately drawn for 1956 and 1957.

Page 34-Add the footnote ", "b Mean daily discharge", to the table of maximums and minimums, Add "b" to all minimum discharges in the table except for water year 1960. Add "b" to maximum discharges for water years 1953-57, 1959.

Page 36-Underline the discharge on March 10.

Page 49-The discharge for June 28 should read 355.

Page 57-The dates of minimum discharge for the indicated water year should read as follows:

Water year	Date
1953	Aug. 25 to Sept. 1, 1953
1954	Many days during Aug. and Sept.
1958	Aug. 3, 5, 1958
1959	Nov. 24, 25, 1959

Page 60-Delete the underline below 4 on August 18.

Page 62-Underline the discharge on November 16.

Page 67-In the extremes paragraph the minimum discharges should be qualified as minimum daily discharges.

Page 72-Minimum discharge for November 14, 1953 should be footnoted "a".

Page 79-Maximum discharge for water year 1958 occurred on November 19, 1957. In the Extremes paragraph the minimum discharges for water years 1953 and 1954 should be footnoted "b".

Page 91-The scale for ordinate, "From storage and total flow through reservoir", should be extended upward to 700 thousands of acre-feet.

Page 93-Maximum discharge for water year 1948 occurred on March 8. Footnote "b" should read "Mean daily discharge".
Maximum discharge for 1953, 1955, and 1956 should be footnoted "b".

Page 107-Add footnote, "a Mean daily discharge", to table of maximum and minimum discharges. The maximum discharge for water years 1948, 1949, and 1950 should be footnoted "a". Change the "Extremes" paragraph to read: "Maximum and minimum discharges during the period of record are contained . . ."

Page 109-Delete underline below 14 on June 1 and July 1.

Page 113-In the Extremes paragraph the minimum discharges should be qualified as minimum daily discharges.

Page 114-Delete underline below 2 on September 1.

Page 115-Delete underline below discharge on February 5, 25, March 3, 21. Add underline to discharge March 31.

Page 116-Delete underline below 25 on June 1.

Page 123-Add underline to discharge on May 1 and 24.

Page 124-Add zeroes to the total, mean, and acre-feet lines for October, November, and April to September.

Page 125-Delete statement of average discharge. Because of regulation by Arghandab reservoir since February 1952 and extensive irrigation development upstream, the figure of average discharge is meaningless. The table of maximum and minimum discharges should have the footnote, "c Mean daily discharge". The minimum discharge for water years 1957, 1959, and 1960 should be footnoted "c".

Page 126-Underline the discharge for February 1 and March 1.

Page 127-The total for the months of October to January, June, July and September should read "0". The discharge for August 1 and 6 should be underlined. The maximum and minimum for calendar year 1948 should read "4500" and "0", respectively. The mean for calendar year 1948 should read "322". The mean and acre-feet discharges for water year 1948-49 should be footnoted "a". The acre-feet discharge for February to May should be footnoted "a".

Page 128-The discharge for January 1 and July 9 should be underlined. The footnote "a Estimated" should be added. The acre-feet discharge for calendar year 1949 should be footnoted "a".

Page 129-The discharge for February 1 should be underlined.

Page 130-The discharge for February 1, May 25, and June 1 should be underlined.

Page 131-The discharge for January 1, March 13, and June 1 should be underlined.

Page 133-The discharge for January 31 and July 14 should be underlined.

Page 134-The discharge for January 31 and May 31 should be underlined.

Page 135-The discharge for November 19 and March 20 should be underlined.

Page 136-The discharge for May 31 should be underlined.

Page 137-The discharge for October 22 should be underlined.

Page 139-Add footnote, "a Mean daily discharge" to table in Extremes paragraph. Add footnote "a" to minimum discharge for water year 1958 to table in extremes paragraph. Remarks paragraph should include the following statement: "Discharge regulated by Kajakai Reservoir on the Helmand River and Arghandab Reservoir on the Arghandab River, and by extensive irrigation throughout the river basin".

Page 140-The discharge for December 31, July 31, and August 31 should be underlined.

Page 141-The discharge for March 1 should be underlined.

Page 142-The discharge for August 31 should be underlined.

Page 144-Delete reference to average discharge. Because of regulation by Kajaki and Arghandab Reservoirs and extensive irrigation development upstream, the figure of average discharge is meaningless. In the table of maximum discharge for water year 1956, the date should read, "April 24, 1956", and the discharge for water year 1949 should be footnoted "b". In the table of minimum discharge the figure for water years 1950, 1959, and 1960 should be footnoted "b", and the entry for water year 1956 should read, "Sept. 10-13, 1956 82,000".

Page 149-Delete discharge figures on November 31, February 30-31, April 31, and September 31.

Page 158-In the Extremes paragraph the maximum daily discharge for 1956 should be 12,200 cfs which occurred July 24.

Page 160-The maximum discharge for calendar year 1956 should be 12,200.

Page 169-The discharge for August 31 should read 9. The discharge for December 2, May 31, and July 31 should be underlined. The station name for water years 1959 and 1960 should be changed to Khash River near Dilaram.

Page 170-Records available paragraph should read, "October 1952 to September 1960 (monthly discharge only October 1952 to March 1953). In Extremes paragraph delete minimum daily discharge for water year 1953.

Page 171-Delete minimum discharge for water year 1952-53.

Page 172-Underline discharges on December 1 and January 5. Delete minimum discharge for calendar year 1952.

Page 177-Delete underline below discharge on March 19. Add underline to discharge on March 1 and June 30.

Page 178-Delete discharge for November 31. Add underline to discharge November 1 and December 11.

Page 196-Change station name from Lashkar Gah to Chah-i-Anjir.

Pages 222 and 223-The chronological sequence of the entries are reversed for these pages.

COMPILATION OF HYDROLOGIC DATA,

HELMAND RIVER VALLEY, AFGHANISTAN

THROUGH SEPTEMBER 1960

Prepared by

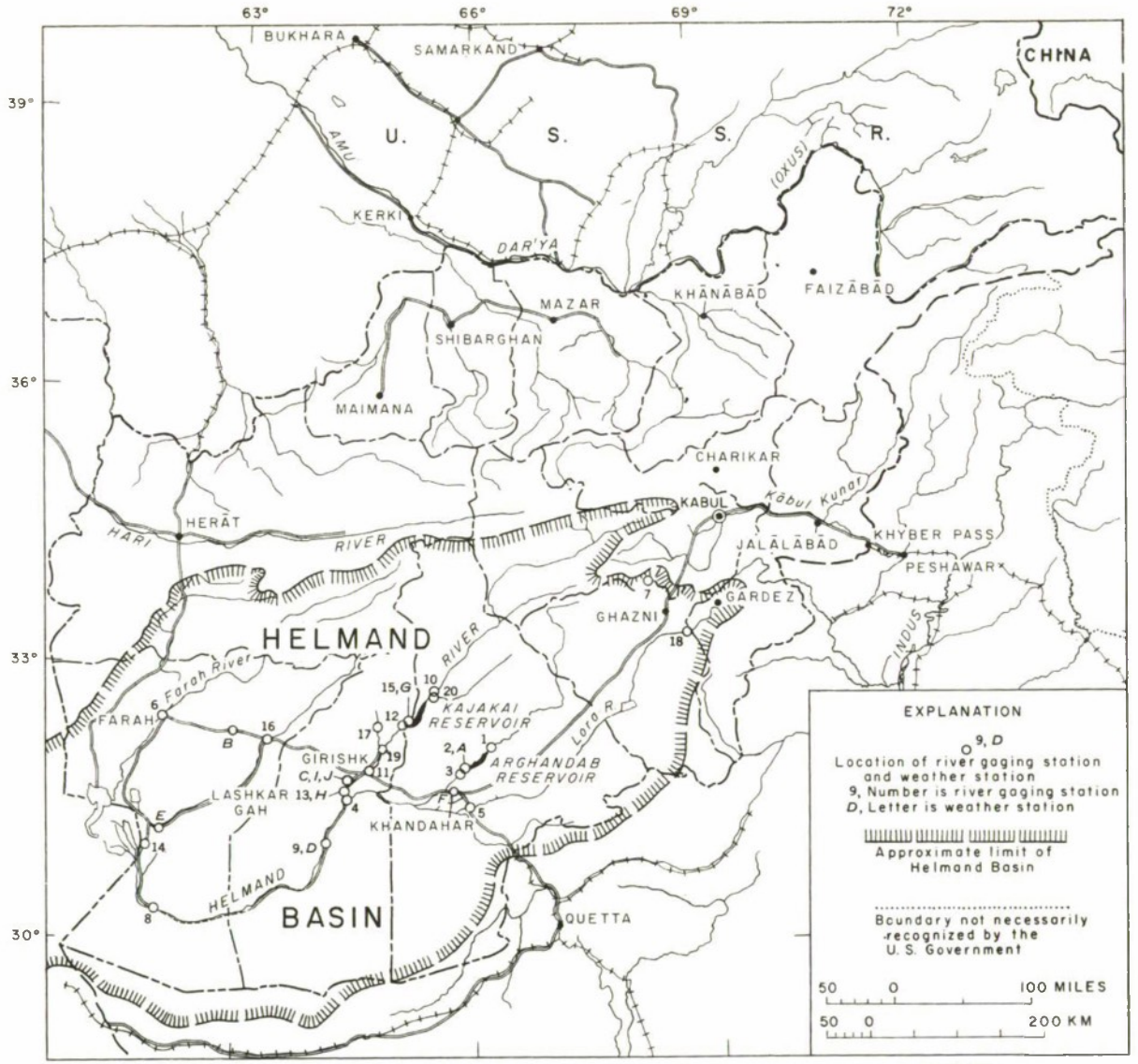
ROBERT H. BRIGHAM,
UNITED STATES GEOLOGICAL SURVEY

serving as

TECHNICAL ADVISOR TO HELMAND VALLEY AUTHORITY,
ROYAL GOVERNMENT OF AFGHANISTAN,
under auspices of the
UNITED STATES AGENCY FOR INTERNATIONAL DEVELOPMENT

Kabul, Afghanistan

March 1964



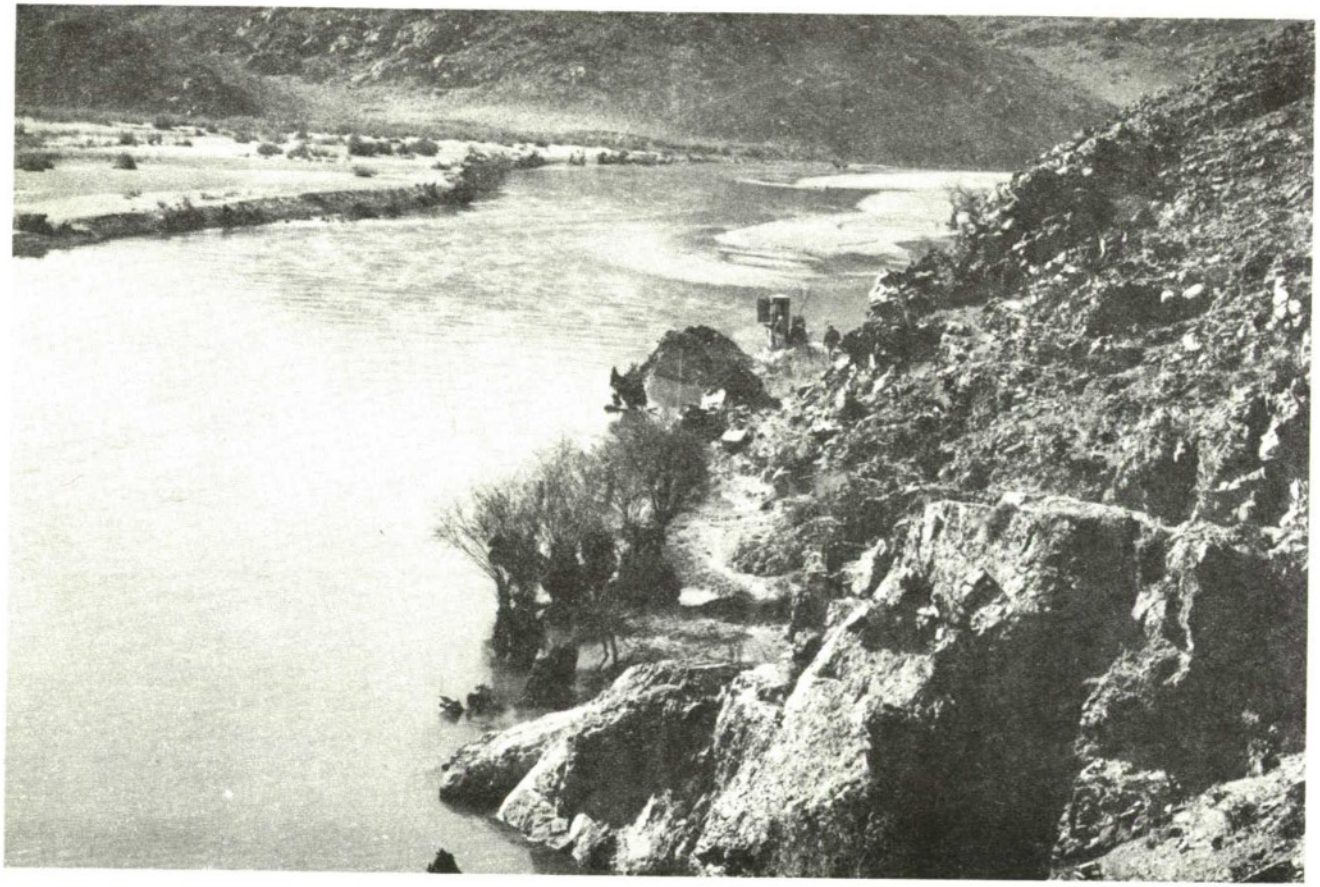
RIVER GAGING STATIONS

1. Arghandab River above Arghandab Reservoir
2. Arghandab Reservoir near Kandahar
3. Arghandab River below Arghandab Reservoir
4. Arghandab River at Qala Bist
5. Arghastan River near Kandahar
6. Farah River at Farah
7. Ghazni River near Ghazni
8. Helmand River at Chahar Burjak
9. Helmand River at Darweshan
10. Helmand River near Dehraout
11. Helmand River at Girishk
12. Helmand River below Kajakai Reservoir
13. Helmand River at Lashkar Gah
14. Helmand River at Shela Charkh
15. Kajakai Reservoir at Kajakai
16. Kash River at Dilaram
17. Musa Qala River at Musa Qala
18. Paltu River near Gardez
19. Seraj Canal at Sangin
20. Tirin River at Dehraout

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A. Arghandab Reservoir
B. Bakwa
C. Chah-i-Anjir
D. Darweshan
E. Kala Kang
F. Kandahar
G. Kajakai Reservoir
H. Lashkar Gah
I. Marja
J. Nad-i-Ali

Figure 1.--Map of Afghanistan showing hydrologic stations in the Helmand River Basin.



Frontispiece.--Arghandab River above Arghandab Reservoir, Afghanistan showing river gaging station.

ROYAL GOVERNMENT OF AFGHANISTAN

Helmand Valley Authority of Afghanistan

President	His Excellency Abdulla Malikyar
Acting President	Doctor Abdul Kayeum
Technical Vice President	Sayed Wahdat Shah

Hydrology Unit

Engineer	Mir Akbar Reza
Engineer in Charge	Ghulam Dastgir Sham

UNITED STATES OF AMERICA

Agency for International Development

Geological Survey

Robert H. Brigham

Technical Advisor

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HYDROLOGIC DATA OF HELMAND RIVER VALLEY, AFGHANISTAN

INTRODUCTION

The Hydrology Section of Helmand Valley Authority presents in this report records of stream flows, miscellaneous discharge measurements and other pertinent hydrologic data collected from stream gaging and climatology stations in the Helmand Valley (fig. 1) through September 1960.

ADMINISTRATION

The report has been prepared by R. H. Brigham, U. S. Geological Survey assigned as Technical Advisor on Hydrology to Afghanistan under the United States Agency for International Development.

The cooperative program of the Hydrology Section is under Sayed Wahdat Shah, Technical Vice President, and Mir Akbar Reza, Engineer of Helmand Valley Authority. The Hydrology Section has a small staff of Afghan technical personnel under the supervision of Civil Engineer Ghulam Dastgir Sham. The Hydrology Section collects field data and analyses, and computes the records with the assistance and direction of the Technical Advisor.

HISTORY

The activity of collecting, processing, computing and analyzing of the stream-flow data and weather records at most important sites in the Helmand River Valley was started when the Morrison-Knudsen-Afghanistan, Incorporated began carrying out its contracts with the Royal Government of Afghanistan in 1947. Subsequently, as the development program between the United States and Afghanistan took place, Foreign Aid Project in 1952, under Point IV; and later, successively as Technical Cooperation Administration (TCA); Foreign Operations Administration (FOA) and International Cooperation Administration (ICA) through 1960, the work was carried out and extended by the Hydrology Section of Helmand Valley Authority assisted by technical advisors from the Water Resources Division of the United States Geological Survey.

SCOPE OF WORK

This report includes the daily discharges collected at gaging stations in the Helmand River watershed between Oct. 1, 1947 and Sept. 30, 1960. Miscellaneous discharge measurements at main canal diversion points and at some other locations are included.

Supplementing the run-off data the significant records of precipitation, evaporation, temperatures, humidity and wind velocity collected in the area are included. Those at Kandahar date back to 1940.

DOWNSTREAM ORDER

In this report, the gaging stations are given in downstream order, that is, from headwater downstream on the main stem. Stations on a tributary entering above a main-stem station are given before that station. If a tributary enters between two main-stem stations, it is listed between them.

EXPLANATION OF DATA

The base data collected at gaging stations consist of records of stage and measurements of discharge. In addition, observations of factors affecting the stage-discharge relation, weather records, and other information are used to supplement base data in determining the daily flow. The records of stage are obtained either from direct readings on a nonrecording gage or from a water-stage recorder that gives a continuous record of fluctuations. Measurements of discharge are made with a current meter by the general methods adopted by the United States Geological Survey on the basis of experience in stream gaging since 1888. These methods are described in Water-Supply Paper 888 and are also outlined in standard textbooks on the measurement of stream discharge.

Rating tables giving the discharge for any stage are prepared from stage-discharge relation curves defined by discharge measurements. If extensions to the rating curves are necessary to define the extremes of discharge, they are made on the basis of indirect measurements of peak discharge (such as slope-area or contracted-opening measurements, computation of flow over dams or weirs, and by other methods), velocity-area studies and logarithmic plotting. The application of the daily mean gage height to those rating tables gives the daily mean discharge, from which the monthly and yearly mean discharges are computed. If the stage-discharge relation is subject to change because of frequent or continual change in the physical features that form the control, the daily mean discharge is determined by the shifting-control method, in which correction factors based on individual discharge measurements and notes by engineers and observers are used in applying the gage heights to the rating tables.

Winters in the Helmand River Basin are relatively mild so that ice effect on the stage-discharge relation can be neglected.

The data herein presented generally comprise a description of the station, a table showing the daily discharge and monthly and yearly discharge of the stream. Records are published by the water year which begins on October 1 and ends on September 30.

The description of the station gives the location, drainage area, records available, type of gage, average discharge, extremes of discharge, and general remarks. The location of the gaging station and drainage area are obtained from the most accurate maps available. Under "Gage" are given the type of gage currently in use and the datum of the present gage above mean sea level. Under "Average discharge" is given the average discharge for the number of years indicated. It is given only for stations having five or more complete years of record. Under "Extremes" are given the maximum discharge and gage height; the minimum discharge if there is little or no regulation; the minimum daily discharge if there is extensive regulation; and the minimum gage height (unless it is of no importance). Unless otherwise qualified, the maximum discharge corresponds to the crest stage obtained by use of a water-stage recorder, or a nonrecording gage read at the time of the crest. Information pertaining to the accuracy of the records and conditions which affect the natural flow at the gaging station is given under "Remarks."

In the table of daily discharge, the figures for the maximum day and the minimum day for each month are underlined. If the figure is repeated it is underlined on the first day of its occurrence.

In the monthly summary below the daily table, the line head "Total" gives the sum of the daily figures; it is the total cfs-days for the month. The line headed "Mean" gives the average flow in cubic feet per second during the month. Discharge for the month is expressed in acre-feet (line headed "Ac-ft").

In the yearly summary below the monthly summary, the figures of maximum are the maximum daily discharges, not the momentary discharges when the water was at crest stage. Likewise, the minimums in this summary are the minimum daily discharges.

Footnotes to the table of daily discharge indicate periods when discharge was computed or estimated by unusual or special methods during periods of no gage-height record or by effects that reduce the degree of accuracy of the records. Days on which discharge measurements were made are indicated by asterisk and footnote.

For the gaging stations on the reservoirs the data presented comprise a description of the station and a table of month-end contents in acre-feet.

At some gaging stations water temperature has been taken at the time a discharge measurement is made but they are not published in this report.

Discharge measurements at miscellaneous sites, particularly at canal diversion points are given after the stream gaging records.

ACCURACY OF FIELD DATA AND COMPUTED RESULTS

The accuracy of stream flow data depends primarily on (1) the stability of the stage-discharge relation or if the control is unstable, the frequency of discharge measurements, and (2) the accuracy of observations of stage, measurements of discharge, and interpretation of records.

The station description states the degree of accuracy of the records. "Excellent" indicates that, in general, the error in the daily records is believed to be less than 5 percent; "good" less than 10 percent; "fair" less than 15 percent; and "poor" probably more than 15 percent. The records of monthly and yearly mean discharge and runoff are, in general, more nearly accurate than the daily records.

Discharge at some stations, as indicated by the monthly mean, may vary widely from natural runoff, owing to diversion, consumption, regulation by storage, increase or decrease in evaporation due to artificial causes or to other factors. For these reasons figures of cubic feet per second per square mile and runoff in inches are not published for these records.

Extensive irrigation is carried on both above and below the gaging stations in the Helmand River Basin of Afghanistan; therefore, the discharge recorded is that occurring after the present irrigation demands have been met upstream.

CLIMATIC RECORDS

Records of temperature, rainfall, evaporation, relative humidity and wind velocity have been collected at a number of locations in the Helmand Valley.

The records collected at each site are introduced with a description giving the location and type of equipment at the station and a summary of the data collected.

DEFINITION OF TERMS

The hydrologic terms defined below are considered to be the most common ones being used in connection with a study of surface waters.

Aggradation: The material process causing the increase or rise of river bed levels at specific discharges of a channel at a given site.

Alluvial river: One which flows in alluvium formed by deposits of sediment it carries. Such sediment except the wash land, is similar to that found in its bed.

Area, drainage: The horizontal projection of the area from which a river or other bodies of water receives surface run-off originating from precipitation. It is also called drainage, watershed, catchment area or river basin.

Backwater: Water held back by some obstruction such as a dam, control features or body of water.

Bank: The elevated land which confines the water to the natural channel in its normal course of flow.

Bank, right or left: That bank on right or left as the river is viewed when facing downstream; by convention.

Bankfull stage: It is the elevation of the water in the stream when it begins to overflow its natural banks.

Base Flow: The sustained flow of streams resulting from outflow of ground water and from drainage of lakes and swamps.

Basin, river: Same as drainage area.

Bench mark: The point whose elevation relative to a given datum is known and is used as a reference in determining other elevations.

Bluffs: High banks of a river within which its width has ranged within historic times.

Channel, unstable: The channel is said to be unstable when there are considerable changes during a year or from year to year, caused by natural accretion and scour of the stream bed.

Control: The feature downstream from a gage which determines the relation of stage to discharge. It may be a gravel bar, a channel constriction, a bend in the river, a long reach of channel, or an artificial structure.

Control section: It is the section in the channel of a stream where the flow is at critical depth, hydraulic conditions above such section being wholly dependent upon characteristics of such control section and entirely independent of hydraulic conditions below the section.

Control, shifting: When the control feature downstream from a gage does not determine a stable stage-discharge relation at the gage because of frequent or continued changes in the physical features that form the control, such control is considered shifting.

Curve, area: In stream gaging, particularly, an area curve is a graph in which cross-sectional areas of a stream at a gaging section are plotted against corresponding water-surface elevations.

Curve, velocity: In stream gaging, particularly, a velocity curve is a graph on which mean velocities of a stream at a gaging section are plotted against the corresponding water surface elevations.

Curve, vertical velocity: A vertical velocity curve is a graph of velocities against depth at a point in a stream.

Datum plane: It is an agreed horizontal plane from which elevations are measured or to which they are referred. (gage datum, sea level datum, etc.)

Flashy stream: A stream on which run-off from rainfall occurs rapidly causing quick rising and falling flood peaks.

Gage, staff: A graduated scale on a staff, plank, or metal plate mounted on post, pier, wall abutment, etc. by which the elevation of the water surface can be read.

Gaging station: A gaging station is a selected site on a river, equipped and operated to obtain data on stream flow.

Hydrograph: A graph showing elevations, discharge, velocity, etc. of a flowing stream with respect to time.

Hydrology: The science dealing with the occurrence of water on the earth, its properties, transformation and movement. Especially its course from precipitation on the land and its movements toward the sea and ultimate return to the atmosphere.

Mean sea level: (MSL) Elevation of the surface of the sea if no tide-producing forces acted upon it. It is determined from average readings of sea level at equal intervals of time over a long period.

Run-off: That portion of the total precipitation on an area that finds its way into the streams as surface flow.

Run-off coefficient: The ratio between depth of run-off to the depth of precipitation producing the run-off over a drainage area.

Run-off depth: The total run-off from a given drainage area divided by the area. Expressed in units of depth comparable to precipitation.

Run-off, acre-feet: The volume of water needed to cover one acre one foot deep.

Run-off, hectare meter: The volume of water needed to cover one hectare one meter deep.

Run-off, mean annual: The annual yield of the drainage basin.

Second-feet or cubic feet per second (cfs): The rate of discharge of a stream whose channel is one foot square and has a mean velocity of one foot per second.

Second-liters or liters per second: The rate of discharge of a stream whose channel is one square decimeter and whose mean velocity is one decimeter per second.

Second-foot day: The volume of water represented by a discharge of one second foot for 24 hours.

Stream gaging: The measurement of the velocity and cross-sectional area of a stream in order to determine the rate of discharge.

Water-stage recorder: A device for recording water elevations.

Water shed: Same as drainage area.

Yield of drainage basin: The mean annual run-off.

CONVENIENT EQUIVALENTS

The following are the most commonly used equivalents of measurements in length, surface, volume and hydraulics in various computations. They include equivalents of English units in metric and vice versa.

Length

1 inch = 2.54 centimeters
1 foot = 12 inches = 0.3048 meter
1 yard = 3 feet = 0.9144 meter
1 mile = 5280 feet = 1.60935 kilometers
1 millimeter = 0.0394 inch
1 centimeter = 0.394 inch
1 meter = 100 centimeters = 39.37 inches = 3.2808 feet

Surface

1 square inch = 0.006944 square foot = 6.45163 square centimeters
1 square foot = 144 square inches = 0.092903 square meter
1 acre = 43,560 square feet = 0.404687 hectare
1 square mile = 27,878,400 square feet = 640 acres = 259 hectares
1 square millimeter = 0.00155 square inch
1 square centimeter = 0.155 square inch
1 square meter = .0001 hectare = 0.000001 square kilometer = 1,550 square inches = 10.7639 square feet
1 hectare = 10,000 square meters = 2.471 acres = 107,636.8 square feet
1 square kilometer = 1,000,000 square meters = 247.1 acres = 10,763,680 square feet = 0.3861 square mile

Volume

1 cubic inch = 0.0005787 cubic foot = 16.3872 cubic centimeters
1 cubic foot = 1,728 cubic inches = 7.4805 U. S. gallons = 28.317 liters = 0.028317 cubic meter
1 cubic yard = 27 cubic feet = 0.76456 cubic meter
1 acre-foot = 43,560 cubic feet = 1,233.49 cubic meters
1 cubic centimeter = 0.06102 cubic inch
1 liter = 1 cubic decimeter = 0.0353 cubic foot = 61.022 cubic inches
1 hectoliter = 0.131 cubic yard = 3.531 cubic feet = 26.42 gallons
1 cubic meter = 1000 liters = 1.308 cubic yards = 35.315 cubic feet
1 liter = 0.2642 U. S. gallon
1 hectoliter = 26.42 U. S. gallons

Hydraulics

1 U. S. gallon of water weighs 8.34 pounds avoirdupois
1 cubic foot of water weighs 62.5 pounds avoirdupois
1 second-foot = 7.48 U. S. gallons per second = 448.8 U. S. gallons per minute = 26,929.9 U. S. gallons per hour = 646,317 U. S. gallons per day
1 second-foot = 86,400 cubic feet per day
1 second-foot = 0.9917 acre-inch per hour = 1.983471 acre-feet per day
1 second-foot = 0.028317 cubic meter per second = 2,446.58 cubic meter per day
1 million U. S. gallons per day = 1.55 second-feet = 3.07 acre-feet per day = 2.629 cubic meters per minute
1 second-foot falling 8.81 feet = 1 horsepower
1 second-foot falling 10 feet = 1.135 horsepower
1 second-foot falling 11 feet = 1 horsepower 80% efficiency
1 second-foot for 365 days will cover 1 square mile 1.1312 feet or 13.5744 inches deep
1 inch deep on 1 square mile = 2,323,200 cubic feet = 0.0737 second-foot for 365 days
1 second liter = 0.0353 second-foot
1 second liter = 0.2642 U. S. gallon per second = 22,826 gallons per day
1 second liter for 365 days = 31,536,000 liters
1 cubic meter per second = 35.315 second-feet
1 cubic meter per minute = 0.5886 second-foot = 4.403 U. S. gallons per second = 1.1674 acre-feet per day
1 cubic meter of water weighs 2,200 pounds avoirdupois
1 meter per second = 3.28 feet per second
1 meter per second = 2.2304 miles per hour = 3.60 kilometers per day
1 foot per second = 0.6818 miles per hour

HYDROLOGIC CONDITIONS

Monthly and annual discharges from the Arghandab and Kajakai Reservoirs as computed from records of discharge for stations below the reservoirs adjusted for changes in reservoir contents (changes include evaporation losses) showing the monthly and annual minimum, median, and maximum discharges, for the period 1948-60.

Monthly and annual discharges, in thousands of acre-feet, of Helmand River below Kajakai Dam, Afghanistan

Water Year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Annual
1948	90.0	113.8	134.1	130.9	146.6	599.6	1,269.0	823.2	271.1	134.5	84.3	89.1	3,885.0
1949	120.5	143.3	155.7	156.8	223.8	715.3	1,832.0	1,022.0	373.9	194.3	135.1	120.8	5,194.0
1950	156.4	176.2	187.5	m222.9	226.7	483.4	m1,024.0	1,703.0	607.1	224.3	125.4	119.1	5,256.0
1951	152.0	160.2	164.7	170.7	177.3	672.5	1,337.0	1,997.0	762.0	285.3	154.3	138.1	6,171.0
1952	157.0	179.3	m188.8	197.0	300.7	753.6	1,367.0	m919.5	347.8	175.4	116.1	125.1	4,827.0
1953	160.1	176.1	181.3	175.5	139.4	310.4	414.0	469.9	455.8	425.6	419.7	283.4	3,611.0
1954	243.4	m196.0	150.6	183.5	340.0	386.4	881.1	1,395.0	544.6	263.4	330.2	m272.4	m5,187.0
1955	246.0	245.5	297.1	408.2	351.2	293.2	325.3	423.5	376.8	272.5	m307.8	284.0	3,831.0
1956	278.8	269.8	285.3	269.7	251.3	313.4	1,918.0	1,083.0	309.1	388.2	466.3	376.5	6,209.0
1957	m234.2	280.2	290.9	374.6	311.3	m418.1	2,070.0	2,572.0	1,126.0	515.8	380.6	419.1	8,993.0
1958	448.8	212.9	402.6	447.9	399.0	459.9	837.0	866.4	510.9	477.6	468.1	425.0	5,956.0
1959	406.8	287.9	256.0	255.5	m229.6	307.2	778.9	815.2	m491.7	465.4	437.8	343.9	5,076.0
1960	263.6	221.0	336.7	276.2	213.3	232.7	210.2	880.3	555.8	m278.7	269.3	253.0	3,990.8

Monthly and annual discharges, in thousands of acre-feet, of Arghandab River below Arghandab Dam, Afghanistan

Water Year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Annual
1948	9.54	15.90	32.02	24.24	27.41	145.80	185.90	76.25	26.42	14.68	9.99	5.86	574.00
1949	12.50	22.19	29.51	33.82	34.74	293.40	271.10	92.64	32.73	17.57	21.99	10.78	873.00
1950	19.74	26.23	30.74	95.28	70.16	m135.90	326.80	285.90	74.83	35.42	25.11	18.86	1,145.00
1951	23.78	32.33	39.87	38.87	47.52	144.30	m260.20	302.10	80.29	34.01	20.92	18.80	m1,043.00
1952	26.94	31.84	37.53	40.13	61.14	58.96	96.92	73.63	58.96	47.57	40.36	20.84	594.80
1953	21.20	m32.53	34.06	53.29	m41.75	40.28	83.62	62.76	50.02	m50.21	m48.26	42.13	560.11
1954	42.70	39.78	m39.35	38.01	31.31	117.70	404.40	232.50	84.94	68.48	60.86	56.73	1,217.00
1955	57.40	54.29	55.46	55.46	41.91	28.56	76.11	66.24	45.40	42.05	39.19	28.61	590.70
1956	m28.75	27.41	30.35	27.12	18.60	162.20	515.00	192.90	62.00	208.70	92.73	73.77	1,440.00
1957	56.60	47.93	53.54	74.30	78.11	272.00	676.50	441.40	181.50	107.90	53.80	54.69	2,098.00
1958	55.62	56.21	109.90	115.40	104.60	107.50	183.90	107.80	88.17	79.48	71.64	m39.27	1,119.00
1959	39.52	50.30	50.36	m45.36	41.42	211.03	285.80	m156.65	112.44	71.26	69.05	66.64	1,200.00
1960	63.35	59.03	61.86	45.66	32.66	47.77	79.16	217.03	m69.34	55.36	59.00	55.87	846.10

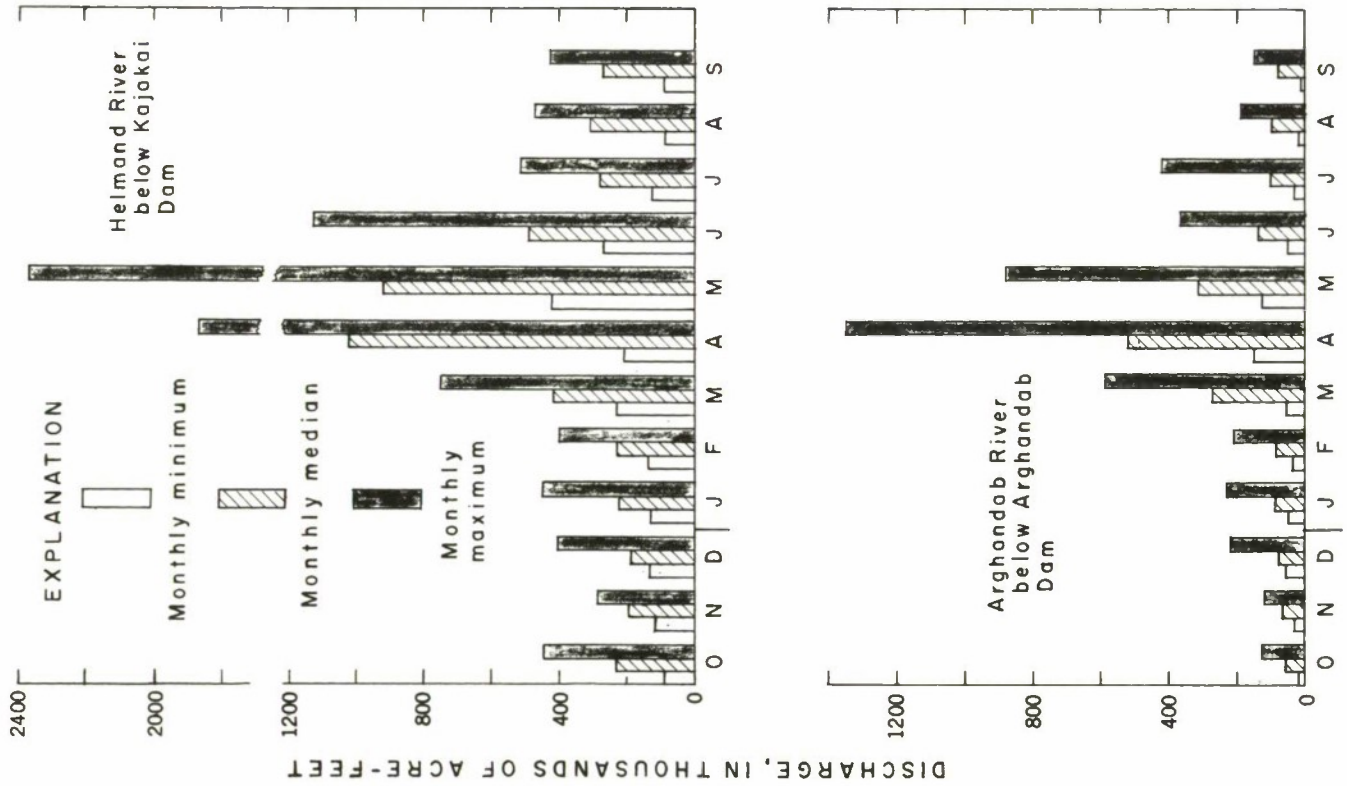


Figure 2.--Monthly minimum, median, and maximum discharges from the Kajakai and Arghandab Reservoirs for the period 1948-60.



Figure 3.--Helmand River above Kajakai Reservoir near Dehraout showing current meter discharge measurement being made by wading.

HELMAND RIVER BASIN

Helmand River above Kajakai Reservoir, near Dehraout, Afghanistan

Location.— Lat 32° 41' N., long 65° 30' E., on right bank, 10 kilometers upstream from village of Dehraout, 15 kilometers upstream from Tirin River, 70 kilometers upstream from Kajakai Dam, and 120 kilometers north of Kandahar.

Drainage area.— 13,700 sq mi, approximately (from Survey of India maps).

Records available.— April 1951 to September 1952 (partial gage heights only), October 1952 to September 1960.

Gage.— Water-stage recorder. Altitude of gage is 1,100 meters (from Survey of India maps). Prior to Nov. 16, 1952, staff gage at site 2 kilometers upstream at different datum.

Average discharge.— 8 years 6,935 cfs, (5,021,000 acre-ft per year).

Extremes.— Maximum and minimum discharges for the water years 1952-60 are given in the following table:

Water year	Maximum			Minimum		
		Gage height (meters)	Discharge (cfs)	Date	Gage height (meters)	Discharge (cfs)
1953	Mar. 7, 1953	2.29	24,500	July 22, 1953	.46	1,620
1954	Mar. 30, 1954	2.70	30,400	Jan. 23, 1954	.575	a1,950
1955	Mar. 15, 1955	3.015	40,700	Sept.3-7,1955	.58	a1,540
1956	Apr. 2, 1956	3.265	48,100	Oct. 2, 1955	.635	1,800
1957	May 3, 1957	-	a66,200	Oct. 1, 1956	.60	2,330
1958	Apr. 27, 1958	-	a26,000	Aug. 26, 1958	.96	2,300
1959	Apr. 11, 1959	2.50	24,400	Sept.28, 1959	.85	2,180
1960	May 3, 1960	2.85	33,600	Sept. 1, 1960	.65	1,870

a Mean daily discharge.

Remarks.— Records good except those for periods of no gage height record, which are fair. Many small diversions for irrigation above station.

Helmand River above Kajakai Reservoir, near Dehraout, Afghanistan
Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2,200	2,650	2,700	2,670	2,240	6,230	10,800	15,400	8,990	2,670	1,860	1,790
2	2,200	2,650	2,700	2,600	2,440	6,750	10,600	15,100	9,720	2,670	1,860	1,790
3	2,200	2,650	2,670	2,440	2,600	7,160	10,500	15,000	13,000	2,670	1,880	1,790
4	2,200	2,650	2,670	2,270	2,740	7,270	10,600	14,800	12,600	2,640	*1,880	1,840
5	2,250	2,650	2,670	2,240	2,840	7,710	11,000	14,400	10,900	2,510	1,880	1,820
6	2,250	2,650	2,670	2,210	2,740	11,400	12,400	13,900	9,480	2,500	1,840	*1,790
7	2,250	2,650	2,700	2,210	2,740	21,900	14,000	13,700	8,500	2,500	1,840	1,790
8	2,300	2,650	*2,700	2,240	2,870	19,400	14,200	13,700	7,940	2,530	1,840	1,820
9	2,300	2,650	2,640	2,300	3,220	14,400	15,000	13,400	7,270	2,500	1,860	1,820
10	2,300	2,650	2,560	2,470	4,630	12,300	16,600	13,000	6,850	2,470	1,860	1,830
11	2,350	2,650	2,560	2,530	3,580	11,400	16,600	13,000	6,640	2,470	1,860	1,840
12	2,400	2,650	2,560	2,560	4,800	10,500	18,300	12,400	6,640	2,330	1,930	1,840
13	2,400	2,650	2,550	2,640	4,270	*9,720	21,500	12,100	6,540	2,270	1,900	1,850
14	2,450	2,650	2,600	2,700	5,110	9,230	19,600	*11,700	6,430	1,970	1,860	1,860
15	2,450	2,650	2,600	2,670	4,670	9,600	18,000	11,400	6,430	1,840	1,860	1,870
16	2,450	2,650	2,640	2,600	4,270	9,600	17,100	11,200	6,330	1,750	1,880	1,880
17	2,450	2,650	2,600	2,470	3,990	8,870	16,800	11,000	5,850	1,750	1,930	1,880
18	2,500	2,810	2,700	2,330	3,720	8,390	16,800	10,800	5,750	1,710	1,900	1,890
19	2,500	2,840	2,740	2,270	3,540	8,270	16,600	10,200	5,660	1,790	1,880	1,900
20	2,550	2,870	2,700	2,360	3,510	8,270	15,400	9,600	*5,470	1,860	1,840	1,900
21	2,600	2,740	2,600	2,330	3,510	8,500	14,800	9,230	5,660	1,770	1,820	1,930
22	2,600	2,740	2,440	2,270	3,720	9,110	14,700	8,870	4,340	1,680	1,790	1,930
23	2,600	2,700	2,330	2,330	3,920	12,400	14,700	8,500	3,510	1,840	1,840	1,900
24	2,600	2,700	2,360	2,400	3,950	20,000	15,000	8,050	3,290	1,950	1,900	1,900
25	2,600	2,700	2,470	2,440	3,920	19,000	15,100	7,820	3,180	1,880	1,880	1,930
26	2,600	2,700	2,400	2,530	4,070	16,800	15,600	9,230	3,150	1,880	1,880	1,930
27	2,600	2,670	2,470	*2,740	4,850	15,100	*15,800	12,200	2,870	1,900	1,880	1,930
28	2,650	2,670	2,470	2,560	5,370	13,600	15,900	13,000	2,700	1,880	1,860	1,930
29	2,650	2,670	2,400	2,400	-	12,400	15,900	11,400	2,670	1,900	1,790	1,970
30	2,650	2,670	2,440	2,300	-	12,300	15,900	10,400	2,640	1,930	1,790	1,970
31	2,650	-	2,600	2,180	-	11,000	-	9,720	-	1,900	1,790	-
Total	75,750	80,530	79,920	75,260	103,830	358,580	455,800	364,220	191,000	65,910	57,660	56,110
Mean	2,444	2,684	2,578	2,428	5,708	11,570	15,190	11,750	6,367	2,126	1,860	1,870
Ac-ft	150,200	159,700	158,500	148,300	205,900	711,200	904,100	722,400	378,800	130,700	114,400	111,300

Calendar year 1952: Max - Min - Mean - Ac-ft -
Water year 1952-53: Max 21,900 Min 1,680 Mean 5,382 Ac-ft 3,896,000

* Discharge measurement made on this day.
Note.--No gage-height record Oct. 1 to Nov. 17, Sept. 10-18; discharge interpolated.

Helmand River above Kajakai Reservoir, near Dehraout, Afghanistan
Discharge, in cubic feet per second, water year October 1953 to September 1954

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2,020	2,300	2,330	2,300	2,840	4,860	22,300	26,200	11,500	5,500	2,870	2,330
2	2,000	2,300	2,330	2,240	2,810	4,850	20,100	26,400	11,000	5,400	2,780	2,300
3	2,020	2,330	2,300	*2,080	2,700	4,940	18,700	25,000	10,500	5,300	2,670	2,300
4	*2,020	2,330	2,270	4,040	2,700	4,800	18,000	25,500	10,000	5,250	2,640	2,300
5	2,050	2,400	2,270	5,200	2,640	4,630	18,300	24,700	9,600	5,200	2,700	2,300
6	2,110	2,360	2,240	4,800	2,560	4,460	18,800	24,600	9,200	5,100	2,670	2,300
7	2,110	2,330	2,240	4,110	2,530	4,380	19,600	24,000	8,800	5,000	2,640	2,300
8	2,110	2,330	2,300	3,510	2,600	4,460	20,300	22,100	*8,500	4,900	2,560	2,300
9	2,140	2,400	2,300	3,040	2,870	4,900	21,000	21,500	8,240	4,900	2,500	2,300
10	2,140	2,360	2,300	2,470	6,800	5,700	20,600	21,500	8,000	4,800	2,500	2,270
11	2,140	2,400	2,300	2,210	5,160	5,850	20,000	20,700	7,800	4,700	2,500	2,240
12	2,140	2,330	2,300	2,210	5,020	6,180	19,300	19,300	7,600	4,600	2,500	2,240
13	2,180	2,300	2,330	2,330	5,560	6,230	19,000	18,100	7,400	4,600	2,470	2,240
14	2,180	2,300	2,360	2,470	5,950	6,090	19,100	17,200	7,200	4,500	2,360	2,240
15	2,180	2,330	2,400	2,530	5,750	6,380	20,300	16,700	7,000	*4,500	2,300	2,240
16	2,210	2,330	2,400	2,500	4,940	7,270	21,500	16,500	6,900	4,400	2,270	2,240
17	2,210	2,330	2,330	2,500	5,560	8,870	22,600	16,100	6,700	4,300	*2,270	2,240
18	2,240	2,330	2,300	2,640	5,110	10,600	22,300	16,100	6,600	4,200	2,240	2,330
19	2,240	2,330	2,270	2,640	5,160	12,500	21,600	15,600	6,400	4,100	2,180	2,330
20	2,270	2,330	2,270	2,530	5,160	14,600	22,300	15,000	6,300	3,900	2,210	2,330
21	2,270	2,330	2,300	2,210	5,060	16,900	23,300	14,500	6,100	3,700	2,240	2,330
22	2,270	*2,330	2,270	1,970	5,020	18,800	23,600	14,000	6,000	3,510	2,240	2,400
23	2,270	2,330	2,560	1,950	5,110	18,500	25,600	13,400	5,900	3,400	2,300	2,400
24	2,270	2,360	2,600	2,050	5,110	*19,100	24,800	13,200	5,800	3,360	2,300	2,440
25	2,270	2,400	2,600	2,270	4,900	18,800	23,400	12,900	5,700	3,220	2,330	2,440
26	2,270	2,440	2,470	2,440	4,760	18,600	23,200	12,700	5,600	3,120	2,400	2,440
27	2,270	2,360	2,440	2,470	4,750	20,000	23,400	12,700	5,500	3,010	2,400	2,470
28	2,270	2,330	2,300	2,530	*4,800	23,400	23,600	12,700	5,500	2,980	2,330	*2,470
29	2,270	2,330	2,110	2,780	-	25,700	24,800	12,600	5,600	2,980	2,330	2,500
30	2,270	2,360	2,210	2,810	-	28,900	25,600	12,400	5,600	2,940	2,330	2,530
31	2,300	-	2,360	2,870	-	26,200	-	12,100	-	2,820	2,330	-
Total	67,710	70,320	72,360	84,700	123,940	365,440	647,000	557,000	222,540	131,190	75,360	70,090
Mean	2,184	2,344	2,334	2,732	4,426	11,790	21,570	17,970	7,418	4,200	2,431	2,336
Ac-ft	134,300	139,500	143,500	168,000	245,800	724,800	1,283,000	1,105,000	441,400	258,200	149,500	139,000

Calendar year 1953: Max 21,900 Min 1,680 Mean 5,312 Ac-ft 3,845,000
Water year 1953-54: Max 28,900 Min 1,950 Mean 6,813 Ac-ft 4,932,000

* Discharge measurement made on this day.
Note.--No gage-height record June 10 to July 21; discharge interpolated.

Helmand River above Kajakai Reservoir, near Dehraout, Afghanistan
Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2,540	2,850	*2,930	2,200	2,570	2,680	10,200	13,000	9,310	3,870	2,070	1,560
2	2,540	2,850	3,000	2,290	2,540	*2,680	9,920	12,800	*8,910	3,800	2,070	1,560
3	2,510	2,850	3,000	2,430	*2,680	2,710	*9,850	12,700	8,850	3,800	2,100	1,540
4	2,540	2,850	3,000	2,540	2,600	2,710	10,200	12,600	9,040	3,800	2,020	1,540
5	2,600	2,850	3,100	2,540	2,650	2,710	10,400	16,800	8,910	3,590	1,920	1,540
6	2,620	2,900	3,000	2,600	2,620	2,810	10,300	20,500	8,670	3,450	1,830	1,540
7	2,650	2,900	3,000	2,510	2,600	2,840	10,500	21,200	8,320	3,380	1,780	1,540
8	2,620	2,900	3,000	2,660	2,570	2,900	10,500	18,600	8,200	3,310	1,730	1,550
9	2,650	2,900	3,000	2,570	2,540	3,030	10,800	16,400	8,080	3,280	1,730	1,550
10	2,650	2,900	3,000	2,480	2,540	3,480	10,800	16,000	8,080	3,250	1,700	1,560
11	2,650	2,900	2,900	2,400	2,480	4,210	11,400	15,200	7,960	3,200	1,660	1,580
12	2,650	2,900	2,900	2,430	2,480	5,820	14,600	14,700	7,960	3,100	1,660	1,600
13	2,680	2,900	2,900	*2,540	2,400	6,120	13,200	13,600	7,720	3,000	1,610	1,600
14	2,680	2,900	2,800	2,430	2,430	19,000	11,500	12,700	7,510	2,900	1,590	1,600
15	2,710	2,900	2,700	2,340	2,460	38,700	10,200	12,200	7,180	2,800	1,610	1,600
16	2,740	2,950	2,600	2,370	2,510	27,600	9,450	11,800	6,860	2,700	1,610	1,650
17	2,740	2,950	2,500	2,510	2,540	16,000	8,910	11,400	6,360	2,550	1,610	1,650
18	2,740	2,950	2,500	2,510	2,540	12,200	8,550	11,200	6,160	2,450	1,610	1,700
19	2,740	2,950	2,430	2,540	2,570	10,200	8,320	11,200	5,800	2,340	1,630	1,700
20	2,780	2,950	2,320	2,570	2,650	9,240	8,320	11,300	5,500	2,230	1,700	1,700
21	2,810	2,950	2,290	2,540	2,650	9,040	8,430	11,600	5,300	2,230	1,700	1,750
22	2,810	2,950	2,340	2,600	2,650	8,790	8,550	11,800	5,100	2,230	1,700	1,750
23	2,810	2,950	2,460	2,620	2,680	8,380	8,790	12,100	4,900	2,180	1,680	1,800
24	2,810	2,950	2,510	2,600	2,710	8,080	9,310	12,400	4,700	2,180	1,590	1,800
25	2,810	2,950	2,570	2,540	2,710	7,960	10,100	12,700	4,600	2,180	*1,590	1,800
26	2,810	2,950	2,510	2,430	2,680	7,960	10,800	13,100	4,500	*2,120	1,590	1,850
27	2,810	2,950	2,510	2,290	2,710	8,080	12,100	12,700	4,400	2,150	1,560	1,850
28	2,810	2,950	2,570	2,340	2,710	8,080	12,600	11,300	4,200	2,120	1,560	1,900
29	2,840	2,950	2,480	2,540	-	11,100	*12,900	10,700	4,100	2,120	1,590	1,900
30	2,850	2,950	2,340	2,620		12,000	13,000	10,200	*4,010	2,070	1,590	1,900
31	2,850	-	2,200	2,570		11,200	-	9,710		2,070	1,590	-
Total	84,050	87,500	83,360	77,090	72,470	278,310	314,500	414,210	201,190	86,450	52,980	50,160
Mean	2,711	2,917	2,689	2,487	2,588	8,978	10,480	13,360	6,706	2,789	1,709	1,672
Ac-ft	166,700	173,600	165,300	152,900	143,700	552,000	623,800	821,600	399,100	171,500	105,100	99,490

Calendar year 1954: Max 28,900 Min 1,950 Mean 6,935 Ac-ft 5,020,000
Water year 1954-55: Max 38,700 Min 1,540 Mean 4,935 Ac-ft 3,575,000

* Discharge measurement made on this day.
Note.—No gage-height record Oct. 30 to Dec. 1, June 19-29, July 10-18, Sept. 7-30; discharge interpolated or estimated.

Helmand River above Kajakai Reservoir, near Dehraout, Afghanistan
Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,900	2,260	2,150	2,740	2,620	4,980	25,300	24,100	7,300	3,620	3,510	2,240
2	*1,920	2,260	*2,120	2,780	2,680	4,800	39,000	23,200	7,100	3,480	3,150	2,270
3	1,920	2,260	2,120	2,840	2,680	5,540	43,800	22,600	6,800	3,440	2,870	2,300
4	1,920	2,260	2,150	2,870	2,680	8,380	36,500	21,900	6,600	3,320	2,670	2,300
5	1,940	2,260	2,180	2,840	2,620	13,800	33,500	21,300	6,400	3,290	2,530	2,300
6	1,940	2,260	2,180	2,810	2,600	18,100	32,500	20,500	6,200	3,220	2,360	2,300
7	1,970	2,260	2,200	2,620	2,570	*15,000	31,600	19,800	6,000	3,180	2,330	2,330
8	1,970	2,230	2,260	2,510	2,570	11,900	31,900	19,000	5,800	3,120	2,360	2,270
9	2,020	2,230	2,260	2,510	2,570	10,600	30,300	*18,200	5,600	3,080	2,270	2,300
10	2,040	2,230	2,230	2,600	2,600	10,500	29,000	18,100	5,400	3,010	2,240	2,300
11	2,040	2,230	2,260	2,680	2,650	10,700	29,200	17,600	5,200	2,940	2,210	2,300
12	2,040	2,200	2,290	2,780	2,710	11,200	30,700	17,000	5,100	2,870	2,180	2,270
13	2,040	2,230	2,320	2,740	2,810	11,000	32,800	16,600	5,000	2,810	2,180	2,270
14	2,070	2,180	2,340	2,710	2,870	10,600	34,400	15,800	4,900	2,740	2,180	2,300
15	2,100	2,180	2,400	2,780	2,870	10,500	34,900	15,000	4,800	2,700	2,210	2,270
16	2,150	2,200	2,400	2,960	2,680	9,380	35,400	14,200	4,800	2,870	2,210	2,300
17	2,180	2,200	2,400	3,420	2,680	9,450	35,900	13,500	4,700	7,920	2,210	2,240
18	2,180	2,200	2,400	3,840	2,600	9,450	36,100	13,000	4,600	6,750	2,210	2,240
19	2,180	2,200	2,430	3,420	2,650	12,100	38,000	12,400	4,500	6,230	2,210	2,240
20	2,150	2,180	2,460	3,150	2,740	18,200	37,000	11,900	4,500	5,750	2,210	2,270
21	2,150	2,150	2,480	2,900	2,810	15,800	38,000	11,400	4,400	5,560	2,210	2,270
22	2,150	2,150	2,480	2,810	2,840	14,100	35,400	11,000	4,300	5,470	2,210	2,270
23	2,150	2,150	2,480	2,810	2,900	13,000	33,000	10,800	4,200	5,320	2,210	2,270
24	2,150	2,150	2,460	2,810	2,960	13,200	31,800	10,500	4,100	13,300	2,210	2,270
25	2,200	2,180	2,510	2,740	4,090	13,200	31,100	10,000	4,000	12,100	2,240	2,270
26	2,230	2,180	2,540	2,740	6,710	13,300	29,400	9,500	4,000	10,800	2,240	2,270
27	2,260	2,180	2,570	2,780	7,610	13,200	27,200	9,000	3,900	12,400	2,210	2,300
28	2,260	2,180	2,570	2,780	6,160	13,100	26,300	8,700	3,800	11,700	2,210	2,300
29	2,260	2,180	2,800	*2,710	5,380	*13,800	25,900	8,200	3,800	7,710	2,240	2,330
30	2,230	2,180	*2,620	2,620	-	17,100	25,200	8,000	*3,720	6,330	*2,210	*2,330
31	*2,260	-	2,680	2,600	-	20,500	-	7,600		*3,950	2,240	-
Total	64,970	66,190	73,540	87,900	94,910	376,480	981,100	460,400	151,520	170,980	73,090	68,490
Mean	2,096	2,206	2,372	2,838	3,273	12,140	32,700	14,850	5,051	5,515	2,358	2,283
Ac-ft	128,900	131,300	145,900	174,300	188,300	746,700	1,946,000	913,200	300,500	339,100	145,000	135,800

Calendar year 1955: Max 38,700 Min 1,540 Mean 4,800 Ac-ft 3,475,000
Water year 1955-56: Max 43,800 Min 1,900 Mean 7,294 Ac-ft 5,295,000

* Discharge measurement made on this day.
Note.—No gage-height record Apr. 19-21, May 24 to June 29; discharge computed on basis of change in contents and release from Kajakai Reservoir.

Helmand River above Kajakai Reservoir, near Dehraout, Afghanistan
Discharge, in cubic feet per second, water year October 1956 to September 1957

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2,360	3,000	2,640	2,670	3,580	4,900	24,200	44,200	29,200	8,800	4,000	2,600
2	2,400	3,050	2,600	2,700	4,230	5,160	24,200	59,200	28,200	8,500	3,800	2,600
3	2,470	3,000	2,600	2,700	4,340	5,800	24,200	66,200	27,200	8,300	3,700	2,600
4	2,560	*2,980	*2,530	2,670	4,340	6,090	42,200	63,200	25,200	8,200	3,700	2,600
5	2,530	2,900	2,500	2,640	4,340	6,230	55,000	56,200	23,200	8,100	3,500	2,600
6	2,530	2,900	2,500	2,560	4,190	6,590	42,500	50,200	22,200	7,900	3,500	2,600
7	2,530	2,870	2,500	2,400	*3,960	7,220	39,200	47,200	21,200	7,700	3,400	2,600
8	2,560	2,840	2,500	2,360	4,230	7,880	36,200	46,200	21,200	7,500	3,400	2,600
9	2,560	2,840	2,530	2,560	3,800	9,230	35,200	46,200	20,200	7,300	3,400	2,600
10	2,600	2,810	2,500	2,670	3,540	10,300	34,200	48,200	20,200	7,200	3,300	2,600
11	2,600	2,810	2,560	2,500	3,540	9,980	38,200	50,200	19,200	7,000	3,400	2,600
12	2,640	2,810	2,600	2,470	3,540	9,290	41,200	47,200	18,200	6,800	3,400	2,600
13	2,620	2,810	2,600	2,900	3,510	*8,990	44,200	44,200	17,200	6,600	3,400	2,600
14	2,620	2,780	2,560	2,900	4,030	9,170	49,200	41,200	16,200	6,400	3,400	2,600
15	2,620	2,780	2,560	2,870	4,030	10,100	49,200	38,200	16,200	6,200	3,400	2,600
16	2,620	2,740	2,530	2,870	4,030	11,200	46,200	38,200	15,200	6,000	3,200	2,600
17	2,620	2,740	2,360	2,870	4,110	37,000	43,200	38,200	15,200	5,800	3,200	2,600
18	2,620	2,740	2,400	2,740	4,110	55,000	42,200	36,200	14,200	5,800	3,200	2,600
19	2,620	2,700	2,530	2,780	4,340	34,200	43,200	35,200	13,200	5,600	3,200	2,600
20	2,620	2,700	2,560	2,780	4,340	27,300	44,200	35,200	13,200	5,400	3,000	2,600
21	2,620	2,670	2,560	2,980	4,270	24,400	44,200	34,200	12,200	5,400	3,000	2,700
22	2,620	2,670	2,530	3,180	4,230	23,400	44,200	34,200	12,200	5,200	2,900	2,700
23	2,620	2,670	2,560	3,400	4,190	20,400	44,200	33,200	11,200	5,000	2,900	2,700
24	2,620	2,640	*2,600	4,430	3,880	19,400	40,200	31,200	11,200	5,000	2,800	2,700
25	2,620	2,640	2,700	5,050	3,880	19,500	38,200	30,200	11,200	4,800	2,800	2,700
26	2,610	2,640	2,670	5,750	4,110	18,500	38,200	28,200	10,200	4,600	2,700	2,700
27	2,610	2,640	2,330	4,760	4,720	21,500	39,200	28,200	9,200	4,600	2,700	2,700
28	2,700	2,640	2,210	4,340	4,850	29,400	37,200	28,200	9,200	4,400	2,600	2,700
29	2,700	2,640	2,210	3,720		28,100	38,200	28,200	9,200	4,400	2,600	2,700
30	2,730	2,640	2,400	3,400		26,100	37,200	28,200	9,200	4,200	2,500	2,700
31	2,880		2,560	3,440		26,200		29,200		4,000	2,600	
Total	80,630	83,290	77,990	101,060	114,260	638,530	1,199,100	1,264,200	501,000	192,700	98,700	79,000
Mean	2,601	2,776	2,516	3,260	4,081	17,370	39,970	40,780	16,700	6,216	3,184	2,633
Ac-ft	159,900	165,200	154,700	200,400	226,600	1,068,000	2,378,000	2,508,000	993,700	382,200	195,800	156,700

Calendar year 1956: Max 43,800 Min 2,180 Mean 7,396 Ac-ft 5,369,000
Water year 1956-57: Max 66,200 Min 2,210 Mean 11,860 Ac-ft 8,589,000

* Discharge measurement made on this day.
Note.—No gage-height record Oct. 13 to Nov. 3, Mar. 19 to June 2; discharge for Oct. 13 to Nov. 3 and Mar. 19 to Sept. 30 computed on basis of change in contents and release from Kajakai Reservoir.

Helmand River above Kajakai Reservoir, near Dehraout, Afghanistan
Discharge, in cubic feet per second, water year October 1957 to September 1958

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2,740	3,880	4,600	4,460	5,700	5,750	17,100	19,700	8,560	4,100	2,660	2,360
2	2,740	4,030	5,000	4,300	6,800	5,850	17,600	19,000	8,330	4,000	2,640	2,360
3	2,940	4,030	5,800	4,300	6,180	5,800	17,200	18,400	8,270	3,900	2,600	2,380
4	2,940	3,990	6,000	4,230	6,000	5,660	16,800	17,800	8,270	3,860	2,560	2,380
5	3,080	3,950	5,600	4,110	5,750	5,560	17,400	17,200	8,270	3,890	2,540	2,360
6	3,150	4,110	5,400	4,150	5,700	5,520	18,100	16,600	8,100	3,830	2,520	2,380
7	3,150	4,420	5,280	4,300	5,660	5,700	18,800	16,200	8,050	3,770	2,480	2,380
8	3,220	4,340	5,320	4,460	5,560	6,040	19,300	15,300	7,800	3,650	2,460	2,360
9	3,220	4,340	5,240	4,670	5,520	7,270	19,300	14,700	7,600	3,650	2,460	2,380
10	3,220	4,230	5,560	5,020	5,280	10,600	18,800	13,600	7,300	3,600	2,460	2,380
11	3,360	4,150	6,230	5,020	5,110	10,700	18,200	13,900	7,200	3,570	2,420	2,380
12	3,360	4,190	5,900	5,060	4,980	10,800	18,100	12,900	7,200	3,520	2,420	2,400
13	3,360	4,300	5,560	5,060	4,900	10,700	18,200	11,400	7,100	3,710	2,440	2,400
14	3,510	4,340	5,200	4,960	4,900	10,600	18,700	12,400	7,000	3,890	2,420	2,400
15	3,510	4,270	5,020	4,900	4,900	10,400	19,000	12,400	6,800	3,540	2,380	2,400
16	3,650	4,190	4,850	4,760	4,900	10,200	19,000	11,900	6,600	3,410	2,400	2,400
17	3,680	4,110	4,760	4,670	4,980	10,500	20,000	10,800	6,600	3,340	2,420	2,420
18	3,720	4,110	4,670	4,760	4,980	11,400	21,000	10,200	6,600	3,260	2,380	2,440
19	3,720	4,190	4,720	5,240	4,980	11,500	21,000	9,850	6,500	3,150	2,400	2,440
20	3,720	5,800	4,760	4,900	4,900	11,900	21,000	9,850	6,400	3,080	2,400	2,480
21	3,680	5,850	4,670	5,280	4,900	12,500	21,000	9,920	6,200	3,040	2,360	2,460
22	3,680	5,060	4,630	5,240	4,900	13,000	22,000	9,980	6,000	2,940	2,360	2,440
23	3,720	4,800	4,670	5,020	4,900	13,600	23,000	10,900	5,800	2,880	2,340	2,440
24	3,760	5,520	4,670	4,900	5,020	13,900	24,000	11,100	5,600	2,840	2,340	2,480
25	3,800	5,900	4,630	5,020	5,370	14,200	24,000	10,400	5,300	2,840	2,320	2,480
26	3,800	5,660	4,460	5,200	5,560	15,600	25,000	9,980	5,000	2,820	2,340	*2,480
27	3,800	5,280	4,420	5,240	5,560	16,700	26,000	9,720	4,800	2,790	2,320	2,500
28	3,800	4,940	4,540	5,240	5,560	19,100	24,000	9,480	4,600	2,760	2,320	2,500
29	3,840	4,590	4,590	5,160	-	19,300	21,000	9,290	4,400	2,740	2,340	2,520
30	3,880	4,600	4,670	5,020	-	18,000	20,300	9,170	4,200	2,700	2,360	2,520
31	3,840	-	4,590	4,980	-	17,100	-	8,870	-	2,700	2,340	-
Total	107,590	137,170	156,010	149,650	149,450	345,450	604,900	392,910	200,450	103,770	75,200	72,700
Mean	3,471	4,572	5,030	4,827	5,338	11,140	20,160	12,670	6,682	3,347	2,426	2,423
Ac-ft	213,400	272,100	309,400	296,800	296,400	685,200	1,200,000	779,300	397,600	205,800	149,200	144,200

Calendar year 1957: Max 66,200 Min 2,360 Mean 12,300 Ac-ft 8,904,000
Water year 1957-58: Max 26,000 Min 2,320 Mean 6,836 Ac-ft 4,949,000

* Discharge measurement made on this day.

Note.--No gage-height record Nov. 30 to Dec. 6, Apr. 15-29, June 8 to July 3; discharge computed on basis of change in contents and release from Kajakai Reservoir.

HELMAND RIVER BASIN

Helmand River above Kajakai Reservoir, near Dehraout, Afghanistan

Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2,540	2,720	2,860	3,000	3,060	6,830	16,100	15,800	7,830	3,860	2,790	*2,500
2	2,540	2,720	2,920	3,000	3,040	13,180	16,000	*15,500	*7,570	*3,770	2,700	2,500
3	2,560	2,720	2,920	3,600	3,250	10,900	18,200	15,400	7,960	3,620	2,600	2,480
4	2,580	2,720	2,920	3,360	3,440	10,500	18,200	15,400	9,250	3,540	2,560	2,520
5	2,580	2,720	2,920	3,180	3,280	10,300	17,300	15,300	7,960	3,440	2,540	2,480
6	2,580	2,700	2,920	3,040	3,100	10,100	*16,800	14,600	7,310	3,410	2,540	2,480
7	2,580	2,700	2,920	2,880	2,970	9,850	17,200	14,000	6,720	3,410	2,520	2,440
8	2,600	2,700	2,940	2,740	3,040	10,000	19,300	13,400	6,170	3,310	2,500	2,460
9	2,620	2,700	2,940	2,700	3,310	13,600	20,800	12,900	5,950	3,260	2,500	2,440
10	2,620	2,700	2,920	2,740	3,890	19,300	24,100	12,400	6,280	3,200	2,480	2,460
11	2,640	*2,700	*3,180	2,700	4,210	14,200	23,800	11,800	6,280	3,120	2,500	2,440
12	2,640	2,760	4,380	2,660	3,570	12,000	22,800	11,800	6,060	3,100	2,500	2,420
13	2,640	2,820	3,890	2,660	3,570	11,100	21,800	11,600	5,680	3,060	2,500	2,400
14	2,660	2,820	3,520	2,740	3,440	11,200	21,200	11,300	5,500	3,040	2,480	2,420
15	2,660	2,760	3,310	2,880	3,440	11,500	21,400	11,900	5,410	2,970	2,480	2,400
16	2,680	2,740	3,120	2,970	3,490	11,900	22,000	14,200	5,140	3,000	2,460	2,420
17	2,700	2,740	3,020	2,970	3,520	11,900	22,100	14,900	5,050	3,200	2,440	2,380
18	2,700	2,740	3,000	3,000	3,830	12,400	21,900	15,400	4,980	3,620	2,420	2,340
19	2,700	2,720	3,040	3,000	3,770	13,300	21,300	14,000	4,900	3,620	2,420	2,320
20	2,700	2,720	3,150	3,040	3,620	14,400	21,000	12,100	4,750	3,360	2,420	2,340
21	2,700	2,740	3,260	3,080	3,600	15,800	21,100	11,500	4,600	3,150	2,460	2,300
22	2,700	2,790	3,150	3,020	3,800	*17,100	22,000	11,400	4,380	3,040	2,440	2,300
23	3,700	2,790	3,150	2,940	*4,050	*18,400	21,300	11,400	4,300	3,000	2,460	2,280
24	2,700	2,760	3,080	3,180	*4,140	19,200	19,700	11,000	4,240	2,970	2,480	2,300
25	2,700	2,840	2,970	3,540	4,020	19,700	18,300	10,600	4,140	3,020	2,460	2,260
26	2,680	2,840	2,940	3,620	3,920	19,500	17,400	10,400	4,110	2,940	2,460	2,280
27	2,700	2,820	2,940	3,360	4,080	17,900	17,000	10,200	4,050	2,880	2,460	2,240
28	2,700	2,820	*2,970	3,180	4,270	19,700	17,000	9,780	3,990	2,820	2,440	2,220
29	2,700	2,820	2,920	3,080	-	21,300	16,700	9,320	3,920	*2,790	2,440	2,220
30	2,720	2,790	2,920	3,040	-	19,700	*16,400	8,800	3,860	2,740	2,460	2,220
31	2,720	-	2,940	3,060	-	17,500	-	8,420	-	2,760	2,460	-
Total	82,240	82,630	96,050	93,960	100,700	444,180	590,200	386,720	168,340	99,020	77,370	71,260
Mean	2,653	2,754	3,098	3,031	3,596	14,330	19,670	12,450	5,611	3,194	2,496	2,375
Ac-ft	163,100	163,900	190,500	186,400	199,700	881,000	1,171,000	767,000	333,900	196,400	153,500	141,300

Calendar year 1958: Max 26,000 Min 2,320 Mean 6,453 Ac-ft 4,672,000

Water year 1958-59: Max 24,100 Min 2,220 Mean 6,281 Ac-ft 4,548,000

* Discharge measurement made on this day.

HELMAND RIVER BASIN

Helmand River above Kajakai Reservoir, near Dehraout, Afghanistan

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2,200	2,620	3,280	2,940	3,060	4,210	8,650	23,000	11,600	4,680	2,540	1,900
2	2,200	2,680	4,420	2,880	3,020	4,270	8,900	25,500	11,500	4,600	2,480	1,920
3	2,220	2,720	*4,050	2,860	3,040	4,340	9,180	31,400	11,400	*4,380	2,500	1,940
4	2,240	2,880	3,860	2,860	3,000	5,140	9,620	29,100	11,400	4,270	2,440	1,940
5	2,240	2,970	3,830	2,880	2,940	6,500	*9,780	24,200	11,600	4,240	2,420	1,960
6	2,260	3,060	3,800	2,970	3,040	5,860	9,920	21,500	11,200	4,180	2,420	1,940
7	*2,260	3,060	3,770	3,100	3,120	5,410	10,500	19,200	11,100	4,020	2,380	1,940
8	2,280	3,040	3,710	3,120	3,200	5,140	11,900	17,700	10,600	3,890	2,380	1,980
9	2,260	3,000	3,740	3,120	3,310	4,900	12,300	17,400	10,400	3,800	2,340	1,980
10	2,260	3,000	3,740	3,120	3,360	4,860	11,400	17,900	9,850	3,620	2,300	2,020
11	2,280	2,970	3,710	3,150	3,440	5,140	10,700	18,700	9,550	3,520	2,280	2,040
12	2,300	2,970	3,680	3,150	3,490	5,320	10,900	19,800	8,880	3,410	2,220	2,040
13	2,320	2,970	3,680	3,150	3,620	6,170	13,600	20,800	8,500	3,360	2,220	2,080
14	2,340	2,970	3,620	3,120	3,920	7,050	16,400	21,900	7,760	3,310	2,200	2,100
15	2,340	2,970	3,620	3,000	4,210	7,700	17,800	22,500	7,510	3,230	2,200	2,100
16	2,360	2,970	3,600	2,880	4,560	8,160	18,600	23,100	6,850	3,180	2,160	2,120
17	2,380	2,970	3,600	2,880	4,450	7,640	22,400	23,700	6,500	3,060	2,140	2,120
18	2,400	2,970	3,540	2,970	4,140	6,940	23,000	23,100	6,170	3,060	2,140	2,120
19	2,400	2,970	3,540	3,060	3,920	6,660	21,100	22,000	6,000	2,920	2,120	2,160
20	2,400	2,940	3,540	3,060	3,960	6,560	19,300	21,100	5,770	2,860	2,120	2,160
21	2,400	2,940	3,540	3,040	3,890	6,500	18,600	20,300	5,680	2,820	2,100	2,160
22	2,420	2,940	3,520	2,880	3,990	6,340	19,400	*18,900	5,590	2,790	2,100	2,160
23	2,440	2,920	3,460	2,820	3,990	6,120	19,500	17,600	5,640	2,740	2,080	2,180
24	2,460	2,940	3,440	2,880	3,920	5,900	18,800	16,400	5,360	2,740	2,080	2,220
25	2,460	3,000	3,380	2,970	3,990	6,000	17,900	15,800	5,230	2,740	2,080	2,240
26	2,480	3,080	3,360	3,000	4,110	7,050	17,600	15,400	5,100	2,740	2,060	2,220
27	2,480	3,340	3,310	*2,940	4,180	9,180	*17,600	15,100	5,050	*2,700	2,060	2,220
28	*2,500	3,340	3,280	3,040	*4,240	8,880	18,200	14,300	4,940	2,640	2,060	2,240
29	2,540	3,360	3,280	3,230	4,210	8,580	19,300	13,200	4,920	2,620	2,020	2,260
30	2,560	3,280	*3,260	3,310	-	8,580	21,100	12,200	4,750	2,600	1,980	2,260
31	2,580	-	3,080	3,150	-	8,580	-	11,800	-	2,560	1,900	-
Total	73,240	89,840	111,240	93,530	107,220	199,680	463,850	614,600	236,080	103,280	68,520	62,740
Mean	2,362	2,995	3,588	3,017	3,697	6,441	15,460	19,830	7,869	3,332	2,210	2,091
Ac-ft	145,300	178,200	220,600	185,500	212,700	396,100	920,000	1,219,000	468,300	204,300	135,900	124,400

Calendar year 1959: Max 24,100 Min 2,200 Mean 6,318 Ac-ft 4,574,000
Water year 1959-60: Max 31,400 Min 1,900 Mean 6,076 Ac-ft 4,411,000

* Discharge measurement made on this day.

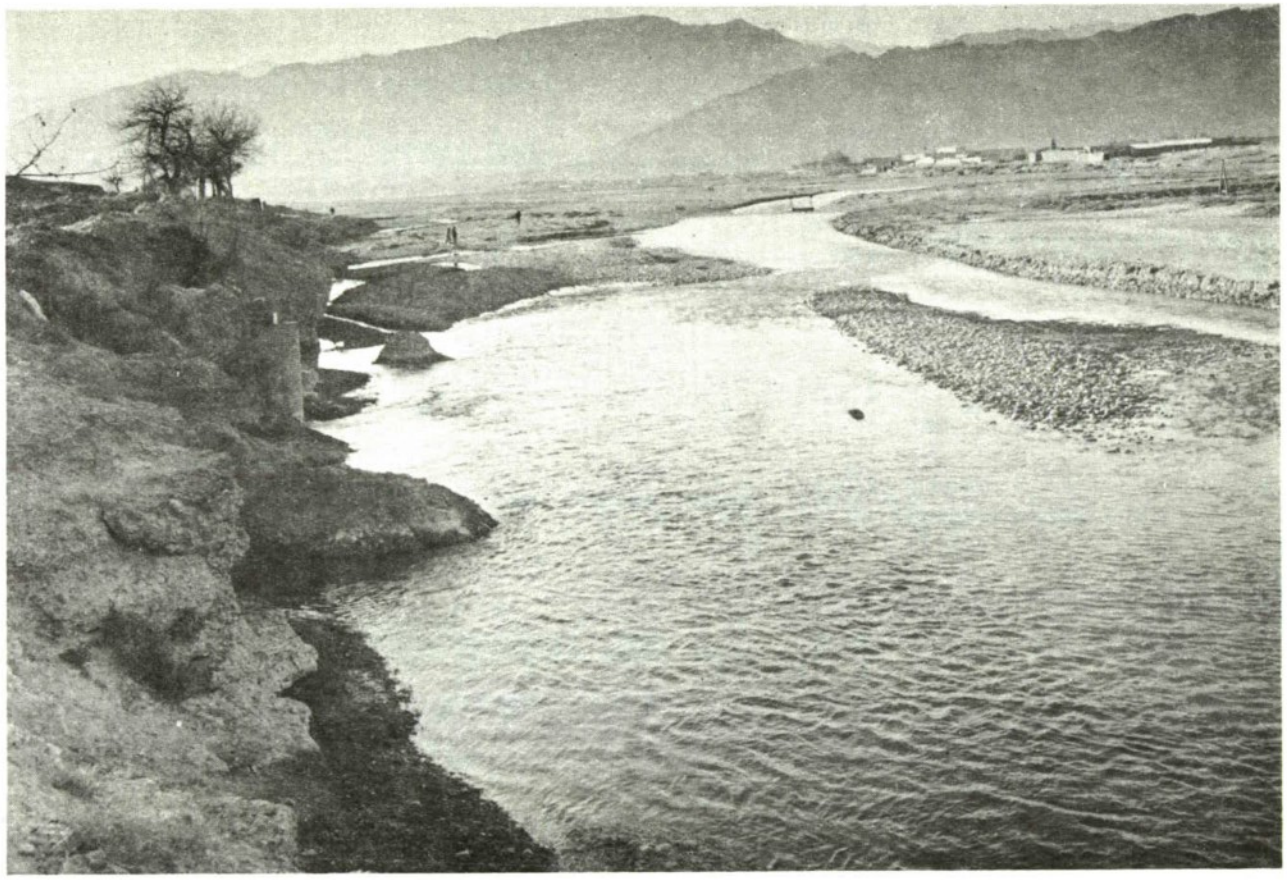


Figure 4.--Tirin River at Dehraout showing water-stage recorder shelter and well, cableway, and control.

Tirin River at Dehraout, Afghanistan

Location.—Lat 32°40' N., long 65°30' E., on left bank at village of Dehraout, 6 kilometers upstream from mouth, about 65 kilometers upstream from Kajakai dam, and 235 kilometers north of Kandahar by road.
Drainage area.—2,160 sq mi, approximately.
Records available.—April to June 1951 (gage heights only), March 1952 to September 1960.
Gage.—Water-stage recorder. Altitude of gage is about 1,100 meters (from Survey of India maps).
Average discharge.—8 years, 618 cfs (447,400 acre-feet per year).
Extremes.—Maximum and minimum discharge for the 1951-60 water years are given in the following table:

Water Year	Maximum			Minimum		
	Date	Gage Height (meters)	Discharge (cfs)	Date	Gage Height (meters)	Discharge (cfs)
1952	Mar. 27, 1952	2.00	3,610			a
1953	May 26, 1953	1.64	2,480	Aug. 10,18,1953	0.17	b71
1954	-	-	(a)	Oct. 1, 1953	-	95
1955	Mar. 14, 1955	1.19	1,690	Aug. 6,7,1955	-	77
1956	Mar. 20, 1956	2.10	6,080	Oct. 4, 1955	1.07	95
1957	Mar. 17, 1957	2.65	8,800	Oct. 5, 1956	1.22	150
1958	Feb. 2, 1958	1.70	4,400	Sept. 24, 1958	0.66	250
1959	Mar. 2, 1959	1.695	4,320	Aug. 31, 1959	0.725	140
1960	Apr. 16, 1960	1.705	3,390	Aug. 1, 1960	0.56	104

a Not determined.
b Mean daily discharge.

Remarks.—Records good except those for periods of no gage-height record, which are fair, and those for 1952 and March-May 1954, which are poor. Many small diversions for irrigation above the station.

Tirin River at Dehraout, Afghanistan
Discharge, in cubic feet per second, period March to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1						-	1,580	702	282			
2						-	1,510	673	263			
3						-	1,530	2,950	244			
4						-	1,910	1,370	234			
5						-	1,710	1,170	225			
6						-	1,560	1,000	225			
7						-	1,580	933	225			
8						-	1,580	863	225			
9						-	1,620	863	225			
10						-	1,620	799	225			
11						-	1,600	702	217			
12						-	1,560	673	217			
13			+353			-	1,510	586	217			
14						-	1,470	572	209			
15						-	1,410	557	209			
16						-	1,410	532	201			
17						-	1,410	506	201			
18						-	1,430	468	209			
19						-	1,450	430	234			
20						-	1,350	408	225			
21						-	1,230	408	225			
22						1,090	1,110	386	225			
23						968	968	364	225			
24						863	898	364	225			
25						880	933	353	225			
26						1,110	916	342	225			
27						3,330	898	342	225			
28						3,240	880	342	225			
29						2,800	863	331	225			
30						1,730	799	331	225			
31						1,580	-	320	-			
Total						-	40,295	20,640	6,762	-	-	-
Mean						-	1,343	666	225	195	163	143
Ac-ft						-	79,920	40,940	13,410	12,000	10,000	8,500

Calendar year: Max Min Mean Ac-ft
Water year : Max Min Mean Ac-ft

+ Result of discharge measurement.

Note.--No gage-height record Oct. 1 to Dec. 12, Dec. 14 to Mar. 21, July 1 to Sept. 30; discharge for July-September estimated on basis of recession curve during the period of no precipitation.

Tirin River at Dehraout, Afghanistan
Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	130	230	277	331	336	799	916	455	234	88	74	116
2	130	234	282	326	342	863	863	430	560	88	74	88
3	130	209	287	315	430	898	831	430	380	88	81	84
4	130	205	287	310	586	907	880	408	301	95	*95	84
5	135	193	292	301	468	959	959	408	244	102	81	88
6	135	193	292	301	424	1,190	1,000	375	217	102	74	*88
7	140	209	301	301	443	1,680	1,020	320	209	92	74	95
8	140	209	292	310	443	1,700	1,000	244	160	88	74	95
9	145	209	296	301	506	1,500	986	230	176	95	74	98
10	150	209	296	306	1,400	1,400	986	230	168	95	71	95
11	150	209	301	310	766	1,250	1,000	221	152	88	74	92
12	155	201	306	306	891	1,150	1,090	225	116	88	81	88
13	160	209	301	443	1,340	1,100	1,110	217	109	88	81	84
14	160	244	301	519	1,240	*1,040	1,040	*209	116	88	88	81
15	165	244	301	408	869	986	968	180	123	88	84	81
16	170	244	310	364	630	898	907	176	144	81	74	81
17	175	244	331	353	572	750	847	172	144	81	74	78
18	180	*244	320	375	544	750	847	168	120	81	71	74
19	180	244	320	380	532	718	815	168	109	74	74	81
20	180	249	320	364	519	718	782	160	130	74	81	81
21	184	254	310	353	494	750	658	156	106	74	88	84
22	*184	258	310	358	481	750	615	164	102	88	95	88
23	184	254	310	353	481	1,110	586	172	116	74	106	92
24	184	249	320	358	468	1,820	544	176	109	81	102	95
25	176	254	320	364	481	1,750	519	193	116	88	102	95
26	184	254	310	358	481	1,640	494	424	102	88	106	95
27	188	272	310	331	557	1,490	*455	874	81	74	95	95
28	197	277	315	*353	630	1,310	455	519	95	81	92	92
29	209	282	331	342	-	1,170	455	353	98	81	88	95
30	215	277	331	331	-	1,040	455	301	95	81	88	95
31	225	-	326	331	-	968	-	263	-	81	102	-
Total	5,170	7,063	9,506	10,756	17,354	35,054	24,083	9,021	4,932	2,655	2,618	2,678
Mean	167	235	307	347	620	1,131	803	291	164	85.6	84.5	89.3
Ac-ft	10,250	14,010	18,850	21,330	34,420	69,530	47,770	17,890	9,780	5,270	5,190	5,310

Calendar year 1952: Max - Min - Mean - Ac-ft -
Water year 1952-53: Max 1,820 Min 71 Mean 359 Ac-ft 259,600

* Discharge measurement made on this day.
Note.--No gage-height record Oct. 1-21, 30, 31, Mar. 8-13; discharge interpolated or estimated on basis of records for Helmand River near Dehraout.

Tirin River at Dehraout, Afghanistan
Discharge, in cubic feet per second, water year October 1953 to October 1954

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	95	168	258	455	644	1,500	3,500	2,300	630	340	230	180
2	98	160	263	449	644	1,300	3,100	2,200	650	330	230	170
3	102	164	263	455	644	1,200	2,900	2,100	630	330	230	170
4	*109	164	263	1,150	644	1,100	2,700	2,100	610	320	220	170
5	123	172	263	3,180	644	1,100	2,600	2,000	590	320	220	170
6	137	180	268	*1,160	644	1,100	2,600	2,000	570	310	220	160
7	130	180	268	766	637	1,100	2,500	1,900	550	310	220	160
8	120	201	263	644	637	1,100	2,500	1,900	*532	310	220	160
9	127	197	272	622	644	1,100	2,500	1,800	510	300	220	160
10	137	197	277	519	2,290	1,200	2,400	1,800	500	300	210	160
11	130	193	287	600	2,460	1,200	2,400	1,700	480	300	210	160
12	130	193	292	750	1,800	1,300	2,400	1,700	470	290	210	160
13	140	201	306	750	2,370	1,300	2,400	1,600	460	290	210	160
14	152	213	310	750	1,940	1,300	2,400	1,600	450	290	210	160
15	168	217	315	750	1,840	1,400	2,400	1,500	440	280	210	160
16	176	217	306	700	1,860	1,400	2,500	1,400	430	280	210	160
17	184	217	306	700	1,910	1,500	2,500	1,300	420	280	*204	160
18	184	217	301	673	1,940	1,600	2,600	1,300	410	270	200	160
19	172	221	306	666	1,660	1,800	2,600	1,200	410	270	200	160
20	168	225	310	651	1,560	2,000	2,700	1,200	400	270	200	160
21	160	221	306	644	1,390	2,200	2,900	1,100	390	270	200	160
22	156	*225	320	644	1,410	2,300	3,100	1,100	390	*261	200	160
23	152	230	802	644	1,330	2,300	3,300	1,000	380	260	190	160
24	152	239	644	637	1,350	2,200	3,200	950	370	250	190	160
25	152	244	512	630	1,350	2,200	3,000	900	370	250	190	160
26	144	239	488	630	1,200	2,100	2,800	900	360	250	190	160
27	144	244	481	630	*950	2,100	2,700	850	360	240	180	160
28	152	249	468	630	1,000	2,300	2,600	800	350	240	180	*162
29	160	254	462	658	-	3,000	2,500	800	350	240	180	160
30	160	254	462	658	-	5,000	2,400	750	340	240	180	160
31	168	-	462	651	-	4,000	-	700	-	230	180	-
Total	4,482	6,296	11,104	23,446	37,392	56,300	80,600	44,450	13,852	8,721	6,344	4,862
Mean	145	210	358	756	1,335	1,816	2,687	1,434	468	281	205	162
Ac-ft	8,890	12,490	22,020	46,500	74,170	111,700	159,900	88,170	27,480	17,300	12,580	9,640

Calendar Year 1953: Max 1,820 Min 71 Mean 359 Ac-ft 259,900
Water Year 1953-54: Max 5,000 Min 95 Mean 816 Ac-ft 590,800

*Discharge measurement made on this day.

Note.— No gage-height record Jan. 11-17, Feb. 2,3,26, Feb. 28 to Sept. 30; discharge for Jan. 11-17, Feb. 2, 3, 26, interpolated, discharge for Feb. 28 to Sept. 30 estimated on the basis of 4 discharge measurements and records for stations on Helmand River near Dehraout and Arghandab River above Arghandab reservoir.

Tirin River at Dehraout, Afghanistan
Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	170	320	430	380	410	*320	700	300	170	120	100	100
2	180	330	440	390	*410	320	*680	300	170	120	100	100
3	180	330	440	390	440	320	650	300	*180	130	100	100
4	190	340	440	390	430	320	600	400	160	130	90	100
5	190	340	440	390	420	320	600	400	160	120	90	100
6	190	350	440	420	410	320	600	500	160	130	90	90
7	200	350	440	390	400	320	600	600	160	130	80	100
8	200	360	440	390	390	310	600	500	160	130	90	100
9	210	360	440	390	390	320	600	400	150	120	80	100
10	210	370	440	390	390	330	600	400	150	120	90	100
11	220	370	430	390	390	400	600	400	150	120	90	100
12	220	380	420	390	390	450	700	400	150	120	80	100
13	220	380	420	390	390	570	600	300	140	110	90	100
14	230	380	410	*390	380	1,200	600	300	130	110	90	100
15	230	390	410	390	370	1,300	500	300	130	100	90	100
16	240	390	400	390	360	1,000	520	300	130	100	90	100
17	240	390	390	390	350	1,000	500	300	130	100	90	100
18	250	400	380	400	350	900	440	300	130	90	90	100
19	250	400	370	400	350	900	390	300	130	90	90	100
20	260	410	380	410	330	860	360	300	120	90	100	100
21	260	410	380	410	330	810	360	200	120	100	90	100
22	270	420	380	410	330	770	350	200	120	100	100	100
23	270	420	380	410	320	750	340	200	120	120	90	100
24	280	420	380	420	320	720	340	200	130	90	100	100
25	290	430	380	420	320	710	300	200	120	90	100	100
26	290	430	380	410	320	680	300	200	120	90	*100	100
27	300	430	380	410	320	670	300	200	110	*90	100	100
28	300	430	380	420	320	670	*300	200	120	90	100	100
29	310	430	380	420	-	700	300	200	120	80	100	100
30	310	*440	380	420	-	700	300	200	*120	80	100	100
31	320	-	380	420	-	700	-	170	-	100	100	-
Total	7,480	11,600	12,580	12,430	10,330	19,660	14,630	9,300	4,160	3,310	2,890	2,990
Mean	241	387	406	401	369	634	488	300	139	107	93.2	99.7
Ac-ft	14,840	23,010	24,950	24,650	20,490	39,000	29,020	18,450	8,250	6,570	5,730	5,930

Calendar year 1954: Max 5,000 Min 95 Mean 843 Ac-ft 610,200
Water year 1954-55: Max 1,300 Min 80 Mean 306 Ac-ft 221,200

*Discharge measurement made on this day.
Note.— No gage-height record Oct. 1 to Dec. 18, Mar. 29 to Apr. 2, May 8 to June 2, July 9-18; discharge estimated on basis of measurement No. 18 and record for Helmand River near Dehraout.

Tirin River at Dehraout, Afghanistan
Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	102	162	210	381	361	946	4,480	2,340	305	270	500	230
2	*110	156	*210	235	400	875	4,680	2,280	288	288	450	220
3	110	162	222	210	400	970	4,800	2,250	*270	288	400	220
4	106	168	222	324	362	2,750	4,720	2,220	235	288	370	220
5	110	168	235	343	362	4,260	4,600	2,040	235	288	350	220
6	110	162	419	362	362	*3,090	4,560	1,940	235	288	330	220
7	110	168	1,620	362	324	2,680	4,100	1,910	235	252	325	220
8	114	175	780	381	305	2,280	3,880	1,820	270	252	315	210
9	114	175	628	400	343	2,160	3,590	1,730	288	235	310	210
10	118	175	708	400	343	2,100	3,520	1,620	252	305	300	210
11	118	175	609	419	343	2,160	3,560	1,560	235	252	290	210
12	123	168	590	419	362	2,190	3,590	1,470	235	324	285	210
13	123	168	1,660	419	400	2,130	3,800	1,440	235	270	280	210
14	128	168	1,390	400	400	2,100	3,960	1,420	252	868	275	210
15	133	175	852	400	362	1,820	3,960	1,330	252	1,060	270	200
16	150	190	685	343	343	1,700	3,840	1,360	252	1,750	265	200
17	156	190	628	288	343	1,640	3,730	1,300	252	3,040	260	200
18	156	190	571	305	343	1,670	3,700	1,140	235	2,090	260	200
19	162	190	552	324	324	2,450	3,420	1,020	235	1,970	250	200
20	162	190	590	324	305	4,180	3,420	946	270	1,500	250	200
21	168	210	571	362	324	3,160	3,380	922	210	1,110	250	200
22	162	200	533	362	324	3,200	3,300	875	210	970	240	190
23	168	200	514	381	362	2,750	3,120	828	210	970	240	190
24	168	210	476	381	362	2,820	3,060	732	210	732	240	190
25	168	210	476	400	968	2,680	2,950	666	210	1,220	240	190
26	175	210	476	400	2,220	2,540	2,880	571	210	1,160	240	190
27	175	210	438	381	1,730	2,480	2,820	533	235	1,390	240	190
28	175	222	419	362	1,330	2,510	2,640	476	252	1,500	230	180
29	182	222	400	*381	1,060	3,020	2,580	400	*324	1,300	230	*180
30	*190	210	*419	381	--	3,700	2,440	324	305	720	*230	180
31	190	--	419	381	--	3,960	--	305	--	580	230	--
Total	4,436	5,579	18,522	11,211	15,787	76,971	109,080	39,768	7,442	27,530	8,945	6,100
Mean	143	186	597	362	544	2,583	3,636	1,283	248	888	289	203
Ac-ft	8,799	11,070	36,740	22,240	31,310	152,700	216,400	78,880	14,760	54,600	17,740	12,100

Calendar year 1955: Max 1,660 Min 80 Mean 280 Ac-ft 215,700
Water year 1955-56: Max 4,800 Min 102 Mean 905 Ac-ft 657,300

*Discharge measurement made on this day.
Note.— No gage-heights July 20 to Sept. 30; discharge estimated on basis of two discharge measurements and records for Helmand River near Dehraout.

Tirin River at Dehraout, Afghanistan
Discharge, in cubic feet per second, water year October 1956 to September 1957

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	162	400	370	419	732	685	800	750	800	800	700	550
2	168	362	370	419	828	732	800	750				
3	162	343	370	419	780	780	800	800				
4	162	*324	*381	419	756	804	800			*		
5	162	330	381	419	732	804	2,000					
6	162		381	419	875	828	4,500					*
7	162		381	457	828	922	1,800					
8	162		381	476	732	1,020	800					*
9	162		381	457	708	1,270	800					
10	168		381	419	708	1,300	800				700	550
11	175		381	419	685	1,190	800				650	500
12	182		381	476	685	1,110	800					
13	175		381	552	685	*1,160	800					
14	182	330	381	533	666	1,190	800					
15	182	320	381	495	666	1,220	800			800		
16	175		381	476	685	1,270	800			750		
17	182		381	495	685	4,580	800					
18	175		381	514	708	3,380	800					
19	182		381	514	685	800	1,000					
20	175		400	533	666	700	850				650	
21	182		400	533	666	600	800				600	
22	182		400	533	666	571	750					
23	182		*419	533	666	552	750					
24	182		419	647	647	571	750					
25	182		419	2,410	647	533	750					500
26	190		400	1,220	647	533	750					400
27	190	320	400	970	647	533	750					
28	200	350	400	852	685	552	750					
29	200		381	780	-	875	750					
30	270	350	381	732	-	875	750		800			400
31	615	-	400	685	-	828	-	800	-	750	600	-
Total	5,992	9,939	12,025	19,225	19,766	32,768	29,700	24,700	24,000	24,000	20,100	15,000
Mean	193	331	388	620	706	1,057	990	797	800	774	681	500
Ac-ft	11,880	19,710	23,850	38,130	39,210	64,990	58,910	48,990	47,600	47,600	39,870	29,750

Calendar year 1956: Max 4,800 Min 162 Mean 631 Ac-ft 656,100
Water year 1956-57: Max 4,580 Min 162 Mean 650 Ac-ft 470,500

* Discharge measurement made on this day.
Note.--Doubtful or no gage-heights Nov. 5 to Dec. 3, Mar. 18-21, Apr. 1 to Sept. 30; discharge estimated on basis of records for Helmand River near Dehraout and change in contents and release for Kajakai Reservoir.

HELMAND RIVER BASIN

Tirin River at Dehraout, Afghanistan

Discharge, in cubic feet per second, water year October 1957 to September 1958

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	400	540	900	1,010	1,960	1,410	2,500	765	455	350	315	270
2	400	580	900	1,000	3,600	1,450	1,980	770	440	320	312	270
3	400	540	1,000	970	2,140	1,470	1,570	756	445	310	298	260
4	400	540	1,000	961	1,980	1,450	1,450	720	445	310	295	260
5	400	520	900	961	1,820	1,450	1,490	684	455	*310	282	260
6	400	540	860	970	1,650	1,400	1,550	669	420	310	312	260
7	450	600	800	952	1,650	1,410	1,570	654	425	320	305	260
8	450	580	800	942	1,610	1,490	1,490	622	435	320	282	260
9	450	580	820	876	1,570	1,610	1,370	616	450	310	295	260
10	450	580	860	1,080	1,530	1,760	1,350	628	420	300	298	260
11	450	560	1,400	1,310	1,510	1,980	1,250	604	420	300	295	260
12	450	560	1,200	1,180	1,510	1,820	1,240	544	408	310	295	260
13	450	560	1,100	1,160	1,490	1,730	1,220	538	400	320	295	260
14	450	560	1,000	1,150	1,490	1,760	1,170	556	400	320	298	255
15	*465	560	1,000	1,120	1,450	1,700	1,170	562	400	350	295	260
16	450	580	1,000	1,090	1,450	1,700	1,370	552	400	640	295	260
17	450	580	1,100	1,060	1,450	1,790	1,350	520	392	604	298	260
18	450	580	*1,120	1,030	1,450	1,920	1,390	500	396	500	298	260
19	450	620	1,120	1,020	1,410	1,870	1,330	490	388	445	282	260
20	450	1,100	1,090	1,050	1,410	1,950	1,730	480	396	420	305	260
21	450	700	1,060	1,200	1,370	2,010	1,630	470	392	414	282	260
22	450	640	1,040	1,150	1,350	2,060	1,550	475	392	372	282	262
23	450	600	1,040	1,080	1,350	2,120	1,610	485	392	340	280	262
24	450	620	1,050	1,080	1,350	2,120	1,510	490	390	320	282	260
25	450	1,200	1,020	1,080	1,450	2,170	1,410	470	380	320	280	260
26	450	1,000	1,010	1,080	1,530	2,300	1,330	470	380	318	280	260
27	450	900	1,010	1,080	1,490	2,430	1,250	460	380	325	280	*255
28	450	800	1,010	1,080	1,410	3,040	1,090	455	370	325	282	255
29	450	700	1,010	1,060	-	2,820	970	455	360	312	280	255
30	450	1,100	1,080	1,040	-	2,660	872	445	350	315	280	255
31	450	-	1,060	1,060	-	2,400	-	445	-	315	270	-
Total	13,665	20,120	31,340	32,772	45,430	59,230	42,682	17,328	12,116	11,025	9,028	7,799
Mean	441	671	1,011	1,057	1,622	1,911	1,423	559	404	356	291	260
Ac-ft	27,100	39,910	62,160	65,000	90,110	117,500	84,660	34,370	24,030	21,870	17,910	15,470

Calendar year 1957: Max 4,580 Min 400 Mean 752 Ac-ft 274,400
Water year 1957-58: Max 3,600 Min 255 Mean 829 Ac-ft 302,500

* Discharge measurement made on this day.

Note.--No gage-heights Oct. 1 to Dec. 17, June 24 to July 15, Aug. 26, 27, Aug. 29 to Sept. 4, Sept. 6-13, 16-19; discharge estimated on basis of Helmand River near Dehraout and change in contents and release for Kajakai Reservoir.

Tirin River at Dehraout, Afghanistan
Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	260	280	380	580	580	1,350	1,860	882	310	246	193	160
2			384	580	580	3,080	2,020	820	310	*246	188	156
3			388	770	616	1,760	2,500	820	*304	242	188	160
4			388	684	610	1,700	2,260	820	317	280	198	156
5		280	392	610	592	1,650	2,260	820	317	256	198	160
6		290	396	592	580	1,490	2,220	775	304	256	188	160
7			400	586	580	1,450	2,160	730	304	261	164	164
8			412	580	580	1,410	2,190	718	285	246	156	164
9			420	574	622	1,700	2,160	696	285	246	169	169
10		290	*430	568	727	2,800	2,160	639	285	242	169	164
11		300	505	568	705	1,700	2,190	628	285	242	169	169
12		310	742	574	647	1,400	2,160	606	275	237	169	164
13		320	568	568	634	1,200	2,050	586	266	242	169	169
14		320	550	562	634	1,100	2,050	586	266	232	169	169
15		320	544	568	622	1,100	2,050	1,190	275	227	169	164
16		325	544	568	628	1,100	2,050	1,100	266	266	169	169
17		325	556	562	634	1,150	2,020	1,450	266	304	169	169
18		330	568	568	698	1,200	1,990	1,260	266	275	178	178
19		328	568	556	705	1,300	1,910	1,040	266	270	169	178
20	260	338	598	550	662	1,550	1,860	882	256	251	169	178
21	270	338	628	544	654	1,700	1,910	730	256	208	169	178
22		344	616	544	698	1,800	2,020	628	246	213	169	178
23		348	610	544	*712	1,830	2,470	578	256	213	174	178
24		352	592	807	691	1,880	1,800	530	256	208	169	178
25		356	586	720	684	1,990	1,560	514	246	203	174	178
26		360	586	628	698	1,990	1,470	434	246	193	169	183
27		364	580	610	742	1,940	1,340	414	256	198	169	188
28		372	*580	604	727	2,050	1,220	369	256	193	156	193
29		372	586	604	-	2,050	1,120	324	256	*193	152	193
30		380	580	598	-	2,100	944	324	246	188	152	203
31	270	-	580	592	-	1,960	-	324	-	188	*152	-
Total	8,170	9,652	16,257	18,563	18,242	52,480	57,974	22,217	8,228	7,265	5,315	5,170
Mean	264	322	524	599	652	1,693	1,932	717	274	234	171	172
Ac-ft	16,200	19,140	32,250	36,820	36,180	104,100	115,000	44,070	16,320	14,410	10,540	10,250

Calendar year 1958: Max 3,600 Min 255 Mean 744 Ac-ft 538,500
Water year 1958-59: Max 3,080 Min 152 Mean 629 Ac-ft 455,300

* Discharge measurement made on this day.
Note.— No gage-heights Oct. 1 to Nov. 11 and Mar. 9-22; discharge estimated on basis of recorded range in stage Mar. 9-22 and record for Helmand River at Dehraout.

Tirin River at Dehraout, Afghanistan
Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	227	294	458	466	442	388	760	1,450	270	174	116	160
2	208	304	606	450	428	388	740	1,750	251	183	116	160
3	208	317	*522	442	414	410	730	1,960	261	*174	122	152
4	208	356	490	428	408	450	*718	1,910	222	156	116	178
5	208	382	490	428	402	540	606	1,640	222	156	116	178
6	*218	382	490	414	402	520	606	1,410	251	156	116	178
7	227	376	482	414	402	500	628	1,240	251	156	122	198
8	218	382	474	421	402	480	730	1,120	242	164	122	178
9	227	382	474	408	395	470	764	992	261	183	122	178
10	227	382	474	408	408	470	684	992	232	183	122	178
11	227	369	466	450	408	480	617	1,020	193	148	129	178
12	237	382	458	442	408	510	684	1,020	183	148	144	198
13	237	382	466	450	414	550	1,120	992	183	156	160	188
14	237	376	490	434	428	600	1,780	960	156	148	270	188
15	237	376	554	421	442	660	1,640	898	148	140	178	198
16	237	362	554	414	414	680	2,100	808	156	140	169	183
17	246	376	498	428	428	670	2,320	898	164	140	198	178
18	237	376	482	414	428	660	2,080	808	169	132	178	174
19	242	376	482	421	442	630	1,860	718	169	156	188	169
20	242	376	482	408	458	600	1,670	718	174	183	188	169
21	246	376	482	408	490	590	1,640	673	164	148	198	169
22	246	376	482	408	490	580	1,560	*606	164	132	178	178
23	246	376	482	402	482	560	1,640	522	174	126	188	188
24	246	376	482	388	482	560	1,520	428	156	126	198	188
25	256	388	474	388	482	580	1,410	402	148	119	188	188
26	256	414	466	388	458	700	1,300	388	148	136	188	188
27	*266	490	466	*388	421	770	1,240	362	156	*129	178	188
28	285	458	482	421	*408	780	1,240	350	156	122	178	188
29	285	442	490	450	395	790	1,280	350	126	129	183	160
30	294	428	*466	434		780	1,280	310	144	129	178	136
31	304		466	434		780		290		129	169	
Total	7,585	11,432	15,130	13,070	12,481	18,126	36,947	27,985	5,694	4,601	5,016	5,332
Mean	245	381	488	422	430	585	1,232	903	190	148	162	178
Ac-ft	15,040	22,680	30,010	25,920	24,760	35,950	73,280	55,510	11,290	9,130	9,950	10,580

Calendar year 1959: Max 3,080 Min 152 Mean 631 Ac-ft 456,500
Water year 1959-60: Max 2,320 Min 116 Mean 446 Ac-ft 324,100

* Discharge measurement made on this day.
Note.— No gage-heights Mar. 31 to Apr. 3; discharge estimated on basis of record for Helmand River near Dehraout.

HELMAND RIVER BASIN

Kajakai Reservoir at Kajakai, Afghanistan

Location.--Lat 32°19' N., long 65°07' E. on gate control tower near left end of Kajakai dam on the Helmand River, about 3 kilometers northeast of village of Kajakai, about 40 kilometers upstream from the Musa Qala River, about 75 kilometers northeast of Girishk, and about 125 kilometers upstream from Arghandab River.
Drainage area.--16,300 sq mi, approximately (from Survey of India maps).
Records available.--January 1953 to September 1960.
Gage.--Water-stage recorder. Datum of gage is at mean sea level (from Morrison-Knudsen Afghanistan surveys based on survey of India datum). Prior to Mar 23, 1953, records are from levels to water surface.
Extremes.--Maximum and minimum contents for the water years 1953-60 are given in the following table:

Water year	Maximum			Minimum		
	Date	Elevation Meters	Contents Acre-ft	Date	Elevation meters	Contents Acre-ft
1953	June 8	1031.56	1,381,900			
1954	May 3	1035.83	1,639,300	Dec. 21	1004.24	347,300
1955	June 26	1034.29	1,543,000	Mar. 10	1008.24	442,200
1956	Apr. 22	1036.67	1,692,900	Feb. 25	1014.05	612,600
1957	May 4	1037.505	1,747,300	Feb. 25	1011.64	537,200
1958	Apr. 27	1035.37	1,610,300	Sept. 30	1014.25	619,200
1959	Apr. 23	1035.25	1,602,800	Jan. 24	1002.77	316,600
1960	May 19	1035.54	1,621,000	Feb. 11-14	999.82	262,900

Remarks.--Reservoir is formed by earth-fill dam; storage began Jan. 28, 1953; dam completed November 1953. Present capacity, 1,495,000 acre-ft between 965.0 meters, center-line of irrigation outlet, and 1033.50 meters, crest of ungated spillway, above sea level. Elevation of top of dam is 1050.0 meters; capacity with future gated spillway, 2,300,000 acre-ft. No dead storage (future power plant installation will govern). Records herein represent total contents. Reservoir is used for irrigation of up to 600,000 acres in the Helmand River Valley and for a future installed power capacity of about 120,000 KW. Reservoir release is through three hollow-jet valves backed up by three 84-inch roto-valves and vertical lift gates. Maximum valve release is 8,400 cfs at 1050 meters pond stage and 7,660 cfs at 1033.5 meters pond stage; maximum spillway design capacity is 350,000 cfs.

HELMAND RIVER BASIN

Kajakai Reservoir at Kajakai, Afghanistan

Contents, in thousands of acre-feet, on last day of month, of Kajakai Reservoir at Kajakai, Afghanistan

Year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1953				6.3	122.7	583.5	1,097.8	1,345.5	1,273.6	991.7	677.3	507.8
1954	409.8	371.1	394.2	421.5	415.7	891.3	1,633.6	1,551.0	1,460.9	1,420.3	1,233.7	1,093.8
1955	1,021.5	968.8	863.2	654.5	482.5	820.6	1,138.6	1,532.4	1,540.5	1,442.4	1,233.7	1,049.8
1956	903.9	787.1	727.4	666.1	645.0	1,295.1	1,633.6	1,525.0	1,535.5	1,548.2	1,224.7	987.3
1957	941.3	845.8	738.2	625.2	567.5	1,317.0	1,671.1	1,631.1	1,533.1	1,437.7	1,290.2	1,037.2
1958	819.1	943.4	936.1	846.0	835.6	1,173.8	1,601.5	1,522.0	1,423.2	1,186.5	877.4	619.2
1959	415.2	350.8	346.0	327.9	354.3	1,085.5	1,577.1	1,525.0	1,375.1	1,076.6	758.6	550.2
1960	452.6	437.8	334.6	269.8	289.6	474.2	1,184.5	1,576.5	1,519.0	1,456.9	1,333.2	1,195.5

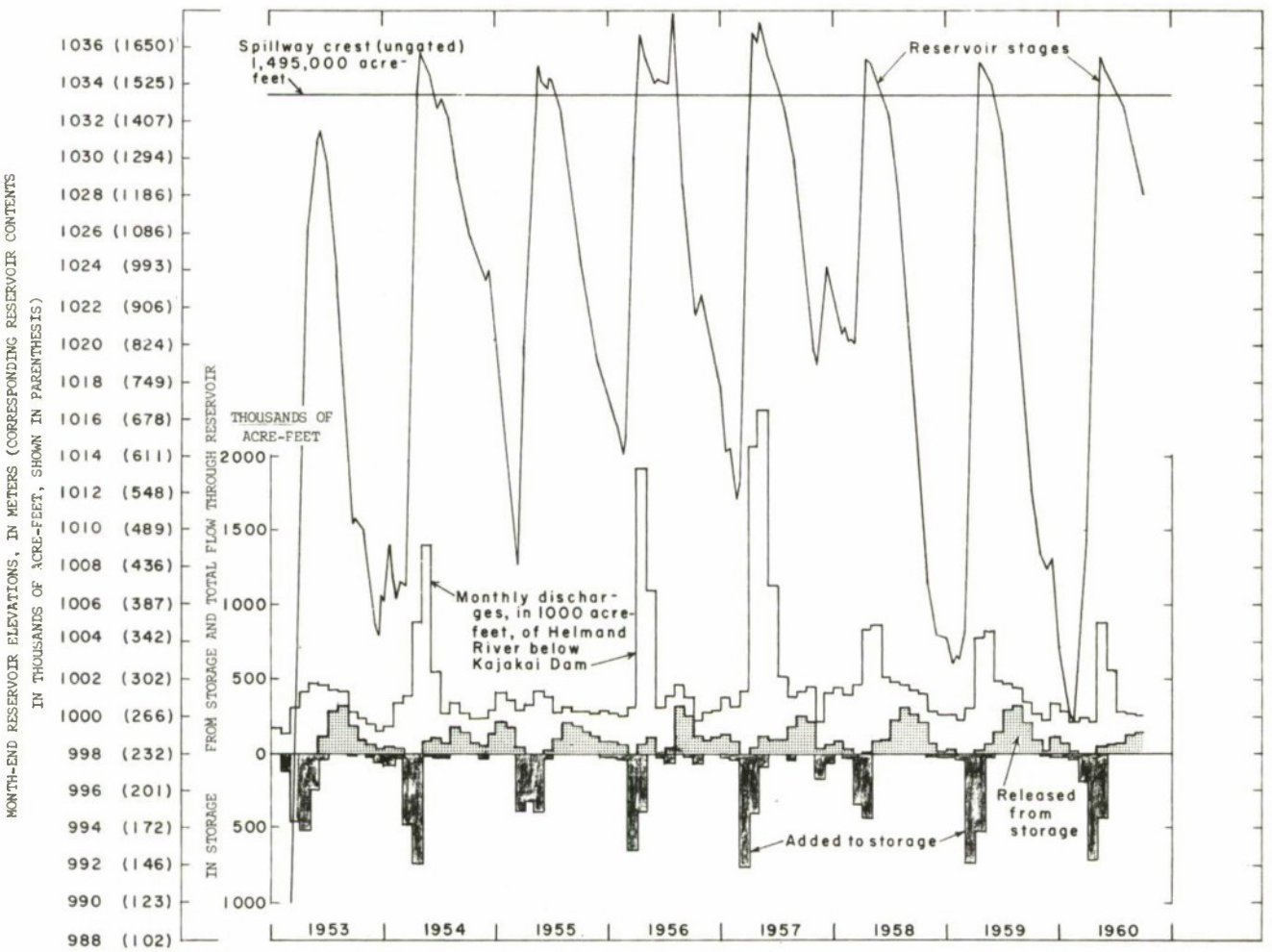


Figure 5.--Operational pattern of Kajakai Reservoir for the calendar year period 1953-60.

HELMAND RIVER BASIN

Helmand River below Kajakai Dam, Afghanistan

Location.—Lat 32°19' N., long 65°06' E., on left bank 2 kilometers downstream from Kajakai Dam, about 100 kilometers northwest of Kandahar, and about 123 kilometers upstream from Arghandab River.
Drainage area.—16,300 sq mi, approximately (from Survey of India maps).
Records available.—October 1947 to September 1960.
Gage.—Water-stage recorder. Datum of gage is 690.169 meters above mean sea level (from Morrison-Knudsen Afghanistan survey based on Survey of India datum).
Average discharge.—13 years, 7,369 cfs (5,336,000 acre-ft per year) adjusted for storage.
Extremes.—Maximum and minimum discharges for the water years 1948-60 are given in the following table:

Water Year	Maximum			Minimum		
	Date	Gage Height (meters)	Discharge (cfs)	Date	Gage Height (meters)	Discharge (cfs)
1948	Mar. 8, 1948	2.76	31,000	Oct. 1, 1947	-	1,100
1949	Apr. 26 or 27, 1949	a3.79	50,100	Oct. 1-6, 11, 1948	-	1,810
1950	May 11, 1950	3.10	37,300	Many days	-	1,980
1951	May 7, 1951	3.70	48,400	Oct. 1-3, 1950	-	2,000
1952	Apr. 20, 1952	2.65	29,000	Aug. 16-25, 1952	-	1,810
1953	May 28-30, 1953	1.32	7,810	Mar.25,Sept.29,1953	-0.60	40
1954	May 3, 1954	2.84	32,200	Nov.12,13, 1953	-	15
1955	May 30 to June 2, 1955	1.47	9,300	Dec.5-8, 1954	-	5
1956	Apr. 21, 1956	-	44,500	Sept.5-8, 1956	-	1,200
1957	May 5, 1957	-	59,800	Feb.26,27, 1957	-	5
1958	Apr. 27, 1958	2.26	24,900	Nov.7-14, 1957	-	5
1959	Apr. 23, 1959	2.11	22,000	Nov. 18-25, 1958	.675	3,820
1960	May 18, 1960	2.15	23,400	Sept.22,23,27, 1960	.49	2,360

a From floodmark

Remarks.—Records good except those for water years 1950, 1951, those below 300 cfs and those for periods of no gage-height record, which are fair. Flow regulated by Kajakai Reservoir since Jan. 28, 1953.

Helmand River below Kajakai Dam, Afghanistan
Discharge, in cubic feet per second, water year October 1947 to September 1948

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,100	1,750	2,070	1,940	2,400	3,080	13,700	23,100	6,690	3,190	1,610	1,260
2	1,150	1,750	2,070	1,980	2,500	3,140	14,300	a21,500	6,490	3,080	1,570	1,260
3	1,150	1,750	2,070	2,070	2,500	3,370	16,900	a21,000	6,200	a3,000	1,540	1,260
4	1,200	1,750	2,070	2,120	2,400	4,700	18,100	a21,000	6,000	a2,900	1,500	1,300
5	1,200	1,750	2,400	2,070	2,350	5,910	16,000	a20,500	5,910	a2,800	1,500	1,330
6	1,200	1,800	2,600	2,070	2,210	6,310	14,900	a20,000	5,720	a2,700	1,460	1,330
7	1,250	1,800	2,450	2,070	2,120	17,700	14,500	a19,000	5,630	a2,600	1,430	1,330
8	1,250	1,800	2,400	2,120	2,120	24,400	*16,400	a18,000	5,460	a2,500	1,460	1,330
9	1,250	1,800	2,450	2,210	2,160	14,600	20,200	a17,500	5,280	a2,500	1,460	1,360
10	1,300	1,850	2,400	2,210	2,300	11,900	20,700	a17,000	5,190	a2,400	1,460	1,360
11	1,350	1,850	2,300	2,160	2,350	10,900	20,200	a16,000	4,940	a2,300	1,460	1,360
12	1,350	1,850	2,210	2,070	2,350	9,590	18,100	a15,000	4,780	a2,300	1,460	1,360
13	1,400	1,900	2,120	1,980	2,400	8,650	17,700	a14,000	4,620	a2,200	1,430	1,360
14	1,400	1,950	2,120	1,940	2,400	8,090	17,900	a13,000	4,540	a2,200	1,400	1,400
15	1,450	1,950	2,160	1,940	2,400	7,420	18,600	a12,500	4,460	a2,100	1,330	1,460
16	1,450	2,000	2,120	1,980	2,400	7,000	19,700	a12,000	4,310	a2,100	1,300	1,500
17	1,500	2,000	2,120	1,980	2,400	*7,000	22,700	11,100	4,170	a2,000	1,260	1,500
18	1,500	2,000	2,070	1,980	2,500	7,420	26,600	10,800	4,100	a1,900	1,260	1,540
19	1,550	2,000	2,020	2,020	2,550	8,880	28,800	10,300	3,950	a1,900	1,300	1,540
20	1,600	2,020	2,070	1,980	2,700	9,940	29,200	10,100	3,750	1,850	1,300	1,570
21	1,600	1,980	2,020	*2,020	2,810	10,200	28,100	9,820	3,680	1,890	1,300	1,650
22	1,600	1,980	2,070	2,020	2,810	10,300	25,300	9,590	3,620	1,810	1,300	1,690
23	1,600	1,980	2,160	2,070	2,760	10,200	24,400	9,350	3,490	1,810	1,300	1,730
24	1,650	1,980	2,160	2,210	*2,650	10,600	24,400	9,000	3,430	1,770	1,260	1,770
25	1,650	2,020	2,160	2,210	2,700	10,400	a25,000	8,650	3,430	1,770	1,230	1,770
26	1,650	2,020	2,120	2,210	3,020	10,900	a25,500	8,310	3,430	1,730	1,260	1,690
27	1,700	2,020	2,160	2,260	3,250	11,300	a26,000	7,860	*3,370	1,730	1,260	1,690
28	1,700	2,020	2,160	2,860	3,250	11,700	a26,000	7,640	3,370	1,730	1,260	a1,700
29	1,700	2,020	2,160	2,450	3,140	12,400	25,500	7,420	3,370	*1,730	*1,300	a1,750
30	1,700	2,020	2,120	2,400	-	11,900	24,600	7,100	3,310	1,690	1,300	a1,750
31	1,700	-	2,020	2,400	-	12,400	-	6,900	-	1,650	1,260	-
Total	44,850	57,360	67,600	66,000	73,900	302,300	640,000	415,040	136,690	67,830	42,520	44,900
Mean	1,447	1,912	2,181	2,129	2,548	9,752	21,330	13,390	4,556	2,188	1,372	1,497
Ac-ft	88,960	113,800	134,100	130,900	146,600	599,600	1,269,000	823,200	271,100	134,500	84,340	89,060

Calendar year 1947: Max - Min - Mean - Ac-ft -
Water year 1947-48: Max 29,200 Min 1,100 Mean 5,352 Ac-ft 3,885,000

* Discharge measurement made on this day.
a No gage-height record; discharge estimated.

Helmand River below Kajakai Dam, Afghanistan
Discharge, in cubic feet per second, water year October 1948 to September 1949

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,810	a2,300	2,400	2,650	3,300	3,880	20,000	a27,000	8,850	4,460	2,400	2,020
2	a1,810	a2,300	2,400	2,600	9,020	3,950	22,000	a25,000	8,540	4,390	2,400	2,020
3	a1,810	a2,350	2,450	2,500	5,370	4,100	24,000	a23,000	8,310	4,310	2,350	2,020
4	a1,810	a2,350	2,500	2,400	4,390	4,310	25,300	22,500	8,090	4,240	2,350	2,020
5	a1,810	a2,350	a2,500	2,260	3,880	4,460	25,100	22,000	7,860	a4,100	2,350	2,020
6	a1,810	a2,400	a2,500	2,160	3,620	4,460	25,500	21,600	7,640	a3,900	2,350	1,980
7	a1,850	a2,400	a2,500	2,120	3,370	4,540	26,800	21,500	7,530	a3,700	2,500	2,020
8	a1,850	a2,400	a2,500	2,160	*3,190	4,700	26,600	21,300	7,420	a3,550	*2,450	2,020
9	a1,850	a2,400	a2,500	2,210	3,140	9,620	29,200	20,900	7,210	*3,430	2,450	2,020
10	*1,850	a2,450	a2,500	2,300	3,250	29,400	38,200	20,400	7,000	3,370	2,400	2,020
11	1,810	a2,450	a2,600	2,350	3,310	22,500	a30,000	19,700	6,900	3,310	2,300	*2,020
12	a1,850	a2,450	a2,600	2,400	3,370	13,700	a25,000	19,300	6,590	3,190	2,260	1,980
13	a1,850	a2,450	a2,600	2,300	3,370	12,000	*24,400	18,100	6,390	3,140	2,210	1,980
14	a1,900	a2,450	a2,600	2,300	3,370	11,600	*33,300	17,000	6,200	3,080	2,160	1,980
15	a1,900	a2,400	a2,600	2,450	3,310	11,500	a32,000	15,900	6,000	3,020	2,160	1,980
16	a1,900	a2,400	a2,600	2,450	3,310	11,200	a31,000	15,200	5,910	2,970	2,120	1,980
17	a1,950	a2,400	a2,600	2,500	3,310	10,800	a30,000	14,800	5,720	2,920	2,120	1,980
18	a1,950	a2,400	a2,650	2,500	3,310	10,400	a30,000	14,500	5,630	2,920	2,120	2,020
19	a2,000	a2,450	a2,650	2,550	3,310	10,100	a31,000	14,000	5,540	2,860	2,120	2,020
20	a2,000	a2,450	2,650	2,550	3,430	10,600	a32,000	13,600	5,460	2,810	2,070	2,020
21	a2,000	a2,450	2,600	2,600	3,560	11,500	32,500	13,000	5,370	2,760	2,070	2,020
22	a2,050	a2,450	2,550	2,760	4,460	11,700	33,100	12,400	5,280	2,700	2,070	2,020
23	a2,050	a2,450	2,600	2,810	5,910	12,600	a34,000	12,400	5,190	2,650	2,070	2,020
24	a2,050	a2,450	2,600	3,020	5,370	13,100	a35,000	*12,400	5,110	2,600	2,070	2,020
25	a2,100	a2,450	2,450	3,250	4,860	12,800	a37,000	12,600	5,020	2,600	2,070	2,070
26	a2,100	a2,400	2,350	3,020	4,460	12,700	a40,000	13,000	4,940	2,550	2,020	2,070
27	a2,150	a2,400	2,450	2,810	4,170	13,100	45,000	11,900	4,860	2,550	2,020	2,120
28	a2,150	*2,400	2,550	2,810	4,100	14,600	a40,000	10,900	4,780	2,500	2,020	2,120
29	a2,200	2,400	2,450	2,760	-	18,600	a35,000	10,200	4,620	2,500	2,020	2,160
30	*a2,250	2,400	2,450	2,700	-	21,600	a30,000	9,700	4,540	2,450	2,020	2,160
31	2,260	-	2,550	2,810	-	20,500	-	9,230	-	2,450	2,020	-
Total	60,730	72,250	78,500	79,060	112,820	360,620	923,600	515,030	188,530	97,980	68,110	60,900
Mean	1,959	2,408	2,532	2,550	4,029	11,630	30,790	16,610	6,284	3,161	2,197	2,030
Ac-ft	120,500	143,300	155,700	156,800	223,800	715,300	1,832,000	1,022,000	373,900	194,300	135,100	120,800

Calendar year 1948: Max 29,200 Min 1,100 Mean 5,466 Ac-ft 3,968,000
Water year 1948-49: Max 45,000 Min 1,810 Mean 7,173 Ac-ft 5,194,000

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of discharge measurements, weather records, flood marks and recession curves.

Helmand River below Kajakai Dam, Afghanistan
Discharge, in cubic feet per second, water year October 1949 to September 1950

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2,120	2,810	3,140	3,020	4,620	5,110	13,400	25,100	17,200	4,940	2,450	a1,980
2	2,160	2,860	3,140	3,020	4,020	5,460	15,900	25,900	16,000	4,890	2,300	a1,980
3	2,210	2,860	3,080	3,020	3,680	5,630	15,900	26,000	15,200	4,780	2,260	a1,980
4	2,260	2,920	2,970	2,920	3,490	5,630	*14,600	26,600	14,600	4,620	2,210	a1,980
5	2,300	2,920	2,970	2,700	3,490	5,540	14,200	29,000	14,000	4,390	2,160	a1,980
6	2,400	2,920	2,970	2,600	3,750	5,460	13,900	32,000	13,600	4,310	2,120	a1,980
7	2,450	2,920	2,970	2,600	4,230	5,630	13,400	31,000	13,300	4,240	2,070	a1,980
8	2,450	2,920	2,970	2,650	4,780	5,910	13,600	30,800	13,300	4,100	2,020	a1,980
9	2,500	2,920	3,080	2,810	4,780	6,290	13,700	30,700	12,600	3,950	2,020	a1,980
10	2,550	2,920	3,190	2,970	4,700	6,590	14,200	32,900	12,100	3,880	2,020	a1,980
11	2,550	2,970	3,250	3,020	4,460	7,860	15,200	36,200	11,900	3,880	1,980	a1,980
12	2,500	2,970	3,310	3,140	4,230	8,880	17,400	34,400	11,500	3,820	a1,980	1,980
13	2,500	2,970	3,310	3,250	4,020	8,540	19,300	33,300	10,900	3,820	a1,980	1,980
14	2,500	2,970	3,250	3,250	4,100	8,310	19,500	31,000	10,300	3,750	a1,980	1,980
15	2,500	2,970	3,190	3,250	4,100	7,980	20,000	30,700	10,100	3,680	a1,980	2,020
16	2,550	2,970	3,140	3,250	4,020	7,750	21,100	30,500	a9,700	3,620	a1,980	2,020
17	2,550	2,920	3,140	3,190	3,950	7,860	19,700	31,400	a9,400	3,560	a1,980	2,020
18	2,600	2,920	3,140	3,190	3,880	7,860	19,300	31,400	a9,000	3,490	a1,980	2,020
19	2,600	2,920	3,080	3,190	3,750	7,640	18,900	30,800	a8,600	3,370	a1,980	2,020
20	2,600	2,920	3,080	3,140	3,750	8,770	18,300	30,300	a8,200	3,310	a1,980	2,020
21	2,650	2,970	3,020	3,080	3,820	10,600	17,000	29,000	a8,000	3,250	a1,980	2,020
22	2,650	2,970	3,020	2,970	3,820	11,700	18,100	27,000	a7,600	3,250	a1,980	2,020
23	2,650	2,970	3,020	2,810	3,820	10,900	18,100	25,500	a7,300	3,190	a1,980	2,020
24	2,700	2,970	3,020	2,700	3,820	10,200	15,900	24,600	a6,900	3,140	a1,980	2,020
25	2,700	2,970	2,970	2,760	3,880	9,590	15,400	23,300	a6,500	3,080	a1,980	2,020
26	2,760	2,970	2,920	3,880	4,100	9,230	16,400	21,600	a6,200	3,020	a1,980	2,020
27	2,760	3,020	2,760	3,820	4,460	8,770	18,100	20,400	a5,900	2,970	a1,980	2,020
28	2,760	3,140	2,700	6,240	4,780	8,310	19,800	20,400	a5,600	2,860	a1,980	2,020
29	2,760	3,190	2,810	12,100	-	8,310	22,200	19,700	5,370	2,700	a1,980	2,020
30	2,810	3,190	2,920	6,490	-	8,550	24,000	18,900	5,110	2,650	a1,980	2,020
31	2,810	-	3,020	5,370	-	8,770	-	18,200	-	2,550	1,980	-
Total	78,860	83,830	94,550	112,400	114,300	243,720	516,500	858,700	306,080	113,090	63,210	60,040
Mean	2,544	2,961	3,050	3,626	4,082	7,862	17,220	27,700	10,200	3,648	2,039	2,001
ac-ft	156,400	176,200	187,500	222,900	226,700	483,400	1,024,000	1,703,000	607,100	224,300	125,400	119,100

Calendar year 1949: Max 45,000 Min 1,980 Mean 7,312 ac-ft 5,294,000
Water Year 1949-50: Max 36,200 Min 1,980 Mean 7,261 ac-ft 5,256,000

* Discharge measurement made on this day.
a No gage-height record; discharge estimated.

Helmand River below Kajakai Dam, Afghanistan
Discharge, in cubic feet per second, water year October 1950 to September 1951

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	a2,000	2,700	2,810	2,700	2,700	a4,800	14,900	35,100	24,400	a7,000	a3,100	a2,300
2	a2,000	2,700	2,810	2,700	2,700	a4,800	15,600	34,700	21,800	a6,800	a3,000	a2,300
3	a2,000	2,700	2,760	2,700	2,700	a5,100	*15,000	28,600	19,700	a6,500	a2,900	a2,300
4	2,020	2,700	2,700	2,700	2,600	a5,400	15,400	30,300	18,900	a6,300	a2,900	2,300
5	2,160	2,700	2,700	2,650	2,500	a5,800	15,200	30,100	17,900	a6,100	a2,800	2,300
6	a2,300	2,700	2,760	2,700	2,500	6,590	15,100	41,000	17,000	a5,900	a2,700	2,300
7	2,350	2,700	2,760	2,860	2,760	7,980	15,200	47,500	16,500	a5,800	a2,700	2,350
8	2,450	2,700	2,760	2,860	3,140	8,540	15,100	44,200	15,900	a5,600	a2,600	2,350
9	2,450	2,700	2,810	2,810	3,250	10,700	14,600	37,200	15,100	a5,400	a2,600	2,350
10	2,450	2,700	2,860	3,140	3,190	10,800	14,200	35,100	14,600	a5,200	a2,500	2,300
11	2,450	2,700	2,920	3,310	3,140	9,700	15,100	34,200	14,500	5,020	a2,500	2,300
12	2,450	2,700	2,920	3,190	3,080	9,350	17,400	34,400	13,900	4,780	a2,500	2,300
13	2,500	2,700	2,810	3,190	2,970	8,770	21,800	38,800	13,300	4,620	a2,500	2,300
14	2,500	2,700	2,810	3,080	2,860	9,120	24,900	36,200	12,600	4,460	a2,500	2,300
15	2,500	2,700	2,760	2,970	2,760	10,300	25,700	32,900	12,000	4,390	a2,500	2,400
16	2,500	2,700	2,700	2,810	2,760	14,300	26,000	31,400	11,500	4,310	a2,400	2,450
17	2,550	2,650	2,700	2,700	2,760	15,100	26,000	30,800	10,800	4,240	a2,400	2,450
18	2,600	2,650	2,650	2,700	2,970	14,000	27,100	30,800	10,400	4,100	a2,400	2,350
19	2,600	2,650	2,600	2,650	3,430	12,700	26,400	31,000	10,100	4,020	a2,400	2,350
20	2,600	2,650	2,600	2,650	3,880	11,900	25,300	31,600	9,590	3,950	a2,400	a2,300
21	2,600	2,650	2,600	2,600	3,560	11,100	24,900	30,800	9,470	3,880	a2,400	a2,300
22	2,600	2,650	2,600	2,600	3,430	10,700	25,300	30,700	9,120	3,820	a2,400	a2,300
23	2,650	2,650	2,600	2,550	3,500	10,800	27,700	30,100	8,880	3,880	a2,300	a2,300
24	2,650	2,650	2,550	2,550	a3,700	12,300	28,300	29,700	8,770	3,820	a2,300	a2,300
25	2,650	2,650	2,500	2,550	a3,900	13,400	27,000	29,000	8,540	3,680	a2,300	a2,300
26	2,650	2,650	2,400	2,600	a4,000	15,700	27,100	28,400	a8,300	3,560	a2,300	a2,300
27	2,650	2,700	2,400	2,650	a4,200	17,400	28,600	27,700	a8,000	3,430	a2,300	a2,300
28	2,650	2,760	2,450	2,650	a4,400	16,700	31,200	27,100	a7,800	3,430	a2,300	a2,300
29	2,700	2,810	2,450	2,700	–	16,000	33,300	26,600	a7,500	3,370	a2,300	a2,300
30	2,700	2,810	2,600	2,760	–	14,900	34,200	25,700	a7,300	3,310	a2,300	a2,300
31	2,700	–	2,700	2,760	–	14,500	–	25,300	–	3,190	a2,300	–
Total	76,630	80,780	83,050	86,040	89,400	339,050	674,200	1,007,000	384,170	143,860	77,800	69,650
Mean	2,472	2,693	2,679	2,775	3,193	10,940	22,470	32,480	12,810	4,641	2,510	2,322
Ac-ft	152,000	160,200	164,700	170,700	177,300	672,500	1,337,000	1,997,000	762,000	285,300	154,300	138,100

Calendar year 1950: Max 36,200 Min 1,980 Mean 7,201 Ac-ft 5,213,000
Water year 1950-51: Max 47,500 Min 2,000 Mean 8,525 Ac-ft 6,171,000

* Discharge measurement made on this day.
a No gage-height record; discharge estimated.

Helmand River below Kajakai Dam, Afghanistan
Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2,300	3,430	3,080	2,970	3,680	5,910	18,100	19,800	9,940	*2,620	2,160	1,850
2	*2,300	3,250	3,080	3,140	3,620	5,820	17,800	19,500	9,940	3,430	2,070	1,940
3	2,300	3,190	3,080	3,140	3,560	5,820	17,900	22,700	9,590	3,310	2,040	1,980
4	2,350	3,140	3,080	3,140	3,490	6,000	19,700	23,500	8,090	3,190	1,980	2,020
5	2,350	3,140	3,080	3,190	3,430	7,100	21,100	20,900	7,750	3,080	1,940	2,020
6	2,350	3,080	3,080	3,310	3,430	9,350	20,700	19,100	7,640	3,020	1,940	1,980
7	2,350	3,080	3,140	3,370	3,490	9,000	20,500	18,400	7,320	3,020	1,940	1,940
8	2,350	3,020	3,140	3,370	3,430	8,430	21,300	18,300	6,690	2,970	1,940	1,940
9	2,400	3,020	3,140	3,310	3,430	7,640	22,400	18,100	6,290	2,970	1,980	1,940
10	2,400	3,020	3,140	3,250	3,490	7,210	23,100	18,800	6,100	2,970	1,940	1,980
11	2,400	3,020	3,140	3,310	3,490	7,210	23,800	18,300	5,910	2,920	1,940	2,020
12	2,450	2,970	3,140	3,950	3,750	7,530	24,200	16,900	5,720	2,920	1,890	2,070
13	2,450	2,970	3,140	3,620	4,020	10,300	24,200	15,900	5,630	2,920	1,850	2,160
14	2,450	2,920	3,140	3,620	8,700	14,800	23,800	15,600	5,620	2,860	1,850	2,160
15	2,550	2,920	3,140	3,490	13,300	14,300	24,000	14,900	*5,540	2,810	1,850	2,160
16	2,600	2,920	3,140	3,250	9,700	13,100	24,600	14,200	5,460	2,760	1,810	2,210
17	2,550	2,920	3,140	2,600	7,640	12,400	25,500	13,000	5,280	2,810	1,810	2,210
18	2,550	2,920	3,140	2,550	6,590	11,200	27,000	12,400	5,020	2,970	*1,810	2,210
19	2,550	2,920	3,140	2,600	5,910	10,900	28,100	12,100	4,940	3,080	1,810	2,210
20	2,550	2,920	3,140	2,810	5,460	11,600	28,600	11,900	4,780	2,970	1,810	2,210
21	2,550	2,920	3,140	3,140	5,280	12,400	*27,000	11,500	4,620	2,860	1,810	*2,160
22	2,500	2,920	3,140	3,190	5,140	14,500	24,700	11,300	4,540	2,760	1,810	2,160
23	2,550	2,920	3,140	3,140	5,140	13,900	23,500	11,300	4,460	2,700	1,810	2,160
24	2,550	2,920	3,140	3,140	5,140	12,800	22,900	11,300	4,390	2,700	1,810	2,160
25	2,550	2,920	3,140	3,220	5,140	12,800	22,700	11,200	4,240	2,650	1,810	2,160
26	2,600	2,970	2,970	2,920	5,140	14,300	22,500	10,800	4,170	2,550	1,850	2,210
27	2,600	3,020	2,810	2,860	5,190	22,200	22,700	10,700	4,100	2,450	1,850	2,210
28	2,700	3,020	2,760	2,970	5,720	27,000	22,700	10,600	4,020	2,400	1,850	2,210
29	3,080	3,020	2,810	3,190	6,100	24,000	23,100	10,300	3,880	2,300	1,890	2,210
30	3,370	3,020	2,860	3,750	-	20,700	21,100	10,200	2,680	2,260	1,850	2,210
31	3,560	-	2,860	3,820	-	18,600	-	10,100	-	2,210	1,850	-
Total	79,160	90,420	95,210	99,330	151,600	379,920	689,400	463,600	175,360	88,440	58,550	63,080
Mean	2,554	3,014	3,071	3,204	5,228	12,260	22,980	14,950	5,845	2,853	1,889	2,102
Ac-ft	157,000	179,300	188,800	197,000	300,700	753,600	1,367,000	919,500	347,800	175,400	116,100	125,100

Calendar year 1951: Max 47,500 Min 2,300 Mean 8,592 Ac-ft 6,219,000
Water year 1951-52: Max 28,600 Min 1,810 Mean 6,650 Ac-ft 4,827,000

* Discharge measurement made on this day.
Note.—Discharge for Jan. 17 to Feb. 4, June 4 to July 20, computed from graph of once daily gage readings.

Helmand River below Kajakai Dam, Afghanistan
Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2,320	2,910	3,010	2,960	2,270	*4,620	6,430	7,490	7,700	7,590	7,090	6,510
2	2,320	2,910	3,010	2,960	*2,270	4,690	6,430	7,490	7,700	*5,010	*7,090	6,510
3	2,320	2,910	3,010	2,910	2,270	4,690	6,510	7,490	7,700	2,960	7,090	*6,510
4	2,370	2,910	3,010	2,750	2,320	4,750	*6,510	7,490	7,700	2,960	6,990	6,510
5	2,370	2,910	a3,010	*2,650	2,410	4,610	6,590	7,490	7,700	6,000	6,990	6,510
6	2,370	2,910	3,010	2,610	2,460	4,880	6,590	7,490	7,700	7,490	6,990	6,430
7	2,410	2,910	3,010	2,560	2,460	4,940	6,590	7,590	7,700	7,490	6,990	6,430
8	2,410	2,910	3,010	2,560	2,560	5,210	6,510	7,590	7,700	7,490	6,890	6,430
9	2,460	2,910	3,010	2,560	2,560	5,350	6,690	2,590	7,700	7,490	6,890	6,430
10	2,460	2,910	2,960	2,700	2,650	5,420	6,790	7,590	7,700	7,490	6,890	6,340
11	2,460	2,910	2,960	2,850	2,210	5,490	6,790	7,590	7,700	7,490	6,890	6,340
12	2,510	2,910	a2,960	2,910	1,700	5,560	6,890	7,590	7,700	7,390	6,890	6,340
13	2,560	2,960	2,960	2,960	1,660	5,560	6,690	7,590	7,700	7,390	6,890	6,260
14	2,560	2,960	2,960	3,220	1,660	5,630	6,600	7,590	7,700	7,390	6,890	4,810
15	2,560	2,910	2,960	3,220	1,620	5,630	6,890	7,700	7,700	7,390	6,890	4,070
16	2,560	*2,910	3,010	a3,100	1,620	5,700	6,990	7,700	7,700	7,390	6,890	4,070
17	2,610	2,910	3,010	3,010	1,660	5,770	7,090	7,700	7,700	7,290	6,790	4,070
18	2,650	3,060	3,060	2,910	1,660	5,770	7,190	7,700	7,700	7,290	6,790	4,070
19	2,650	3,110	a3,100	2,850	1,660	5,770	7,190	7,700	7,700	7,290	6,790	4,070
20	2,700	3,060	3,110	2,750	2,180	5,770	7,190	7,700	7,590	7,290	6,790	4,070
21	2,700	3,010	3,060	2,960	2,750	5,770	7,290	7,700	7,590	7,290	6,790	4,070
22	2,750	3,010	*2,910	2,850	*2,750	5,850	7,290	7,700	7,590	7,290	6,690	4,070
23	2,750	3,010	2,800	a2,850	3,420	5,850	7,290	7,700	7,590	7,290	6,690	4,070
24	2,800	3,010	2,750	2,850	1,090	3,540	7,390	7,700	7,590	7,190	6,690	4,070
25	2,800	3,010	2,800	2,910	4,560	40	7,390	7,700	7,590	7,190	6,690	4,070
26	2,800	3,010	2,800	2,960	4,620	260	*7,390	7,700	7,590	7,190	6,690	4,070
27	2,850	3,010	2,800	3,170	4,620	3,720	7,390	7,700	7,590	7,190	6,590	4,070
28	2,910	3,010	2,850	3,220	4,620	6,260	7,390	*7,810	7,590	7,090	6,590	1,360
29	*2,910	2,960	2,850	3,010	-	6,340	7,390	7,810	7,590	7,090	6,590	40
30	2,910	2,960	2,800	a2,500	-	6,430	7,390	7,810	7,590	7,090	6,590	205
31	2,910	-	2,850	2,220	-	6,430	-	7,700	-	7,090	6,590	-
Total	80,720	88,800	91,410	88,500	70,290	156,500	208,750	236,890	229,790	214,560	211,590	142,875
Mean	2,604	2,960	2,949	2,855	2,510	5,048	6,958	7,642	7,660	6,921	6,825	4,762
Ac-ft	160,100	176,100	181,300	175,500	139,400	310,400	414,000	469,900	455,800	425,600	419,700	283,400

Calendar year 1952: Max 28,600 Min 1,810 Mean 6,640 Ac-ft 4,820,000
Water year 1952-53: Max 7,810 Min 40 Mean 4,988 Ac-ft 3,611,000

* Discharge measurement made on this day.
a No gage-height record; discharge estimated.
Note.— Discharge regulated by Kajakai Dam after Jan. 28.

Helmand River below Kajakai Dam, Afghanistan
Discharge, in cubic feet per second, water year October 1953 to September 1954

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	4,040	3,890	3,920	1,980	a6,020	a6,100	a7,190	31,600	13,500	*a830	*5,420	5,350
2	*4,010	*3,890	3,920	1,200	*6,100	*6,260	*7,390	32,000	13,200	a820	5,420	5,350
3	4,010	3,890	2,210	a620	5,770	a6,100	7,440	32,200	13,000	1,340	5,350	5,350
4	4,010	3,860	a45	1,950	5,700	a6,100	7,490	32,000	12,700	4,940	5,350	5,350
5	4,010	3,830	*22	1,480	6,100	a6,100	7,540	31,600	12,300	4,780	5,350	5,350
6	4,010	3,830	465	1,320	6,020	a6,100	7,590	31,000	12,100	4,620	5,350	5,350
7	4,010	3,830	4,070	2,020	6,020	a6,100	7,640	30,600	11,700	4,400	5,280	4,540
8	4,010	3,800	4,070	2,020	6,020	a6,100	7,700	29,700	11,300	4,370	5,350	4,250
9	4,010	3,720	4,070	a2,000	6,020	a6,100	7,760	28,600	11,000	4,370	5,350	4,250
10	3,980	2,500	4,070	a1,500	6,260	a6,100	7,810	27,600	10,400	4,370	5,350	4,250
11	3,980	*40	4,070	a1,500	6,100	a6,100	7,810	27,000	10,200	4,370	5,350	4,250
12	3,980	a15	4,070	a1,500	6,100	a6,100	7,860	26,000	9,700	4,370	5,420	4,250
13	3,950	a15	4,070	a1,500	6,180	a6,100	7,910	24,600	9,360	4,370	5,420	4,370
14	3,950	1,170	4,070	a2,000	6,180	a6,100	7,960	23,400	8,900	4,370	5,350	4,630
15	3,950	3,660	4,070	a2,000	6,180	a6,100	7,960	22,200	8,560	4,370	5,350	4,780
16	3,950	3,660	4,070	a2,000	6,180	a6,100	8,020	21,400	8,240	4,370	5,350	4,780
17	3,950	3,660	4,070	a2,000	6,180	a6,100	8,080	20,600	8,020	4,370	5,350	4,780
18	3,950	3,660	4,070	a2,000	6,180	a6,180	3,350	20,000	7,910	4,370	5,420	4,750
19	3,950	3,660	4,010	a4,100	6,180	a6,180	11,000	19,500	*7,700	4,370	5,350	4,750
20	3,950	3,660	4,010	a4,100	6,180	a6,180	*14,900	18,900	7,700	4,370	5,350	4,750
21	3,950	3,660	2,670	a4,100	6,180	a6,260	*18,600	18,200	7,700	4,370	5,350	4,690
22	3,920	3,640	a40	a4,100	6,180	a6,340	22,200	17,600	7,700	4,370	5,420	4,750
23	3,920	3,740	a35	a4,100	6,180	a6,340	26,600	17,100	7,700	4,370	5,350	4,750
24	3,920	3,950	a35	a4,100	6,180	a6,430	*29,000	16,400	7,700	4,370	5,420	4,750
25	3,920	3,950	a35	a4,100	6,340	a6,510	*30,000	16,000	7,590	4,490	5,420	4,300
26	3,920	3,950	a35	a4,100	6,180	a6,590	30,000	15,500	7,590	5,140	5,420	3,720
27	3,920	3,920	a30	a5,000	6,180	a6,590	30,000	15,100	7,590	5,490	5,420	3,720
28	3,890	3,920	a30	a6,020	6,340	a6,690	30,400	14,800	7,700	5,420	5,350	*3,720
29	3,890	3,920	1,600	a6,020	-	a6,790	30,800	14,400	5,000	5,420	5,350	3,610
30	3,890	3,920	1,980	a6,020	-	a6,890	31,200	14,000	828	5,420	5,350	3,830
31	3,890	-	1,980	a6,020	-	a6,990	-	*13,800	-	5,420	5,350	-
Total	122,690	98,810	75,912	92,490	171,430	194,820	444,200	703,400	274,588	132,820	166,480	137,320
Mean	3,958	3,294	2,449	2,984	6,122	6,285	14,810	22,690	9,153	4,285	5,370	4,577
Ac-ft	243,400	196,000	150,600	183,500	340,000	386,400	881,100	1,395,000	544,600	263,400	330,200	272,400

Calendar year 1953: Max 7,810 Min 15 Mean 5,088 Ac-ft 3,684,000
Water year 1953-54: Max 32,200 Min 15 Mean 7,164 Ac-ft 5,187,000

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of reservoir releases.

Helmand River below Kajakai Dam, Afghanistan
Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3,810	4,180	4,120	6,750	6,400	6,150	*4,700	6,300	*9,300	4,210	5,120	4,880
2	3,810	4,150	4,120	6,750	6,480	6,400	4,740	6,300	9,300	4,120	5,120	4,940
3	3,810	4,180	3,480	6,750	6,480	6,150	4,740	6,300	9,200	4,050	5,120	4,940
4	3,780	4,180	1,540	6,560	6,480	6,120	4,740	6,300	9,200	3,990	5,120	4,940
5	3,780	4,180	*5	6,750	6,480	6,120	4,770	6,380	9,100	3,930	5,120	4,940
6	3,780	4,180	5	*6,720	6,450	6,120	4,740	6,300	9,000	*3,810	5,080	4,910
7	3,780	4,180	5	6,720	6,450	5,010	4,700	6,300	8,800	3,750	5,080	4,910
8	3,780	4,180	5	6,720	6,420	4,150	4,700	6,380	8,600	3,690	5,080	4,910
9	3,850	4,100	5,870	6,720	6,300	4,150	4,740	6,380	8,420	3,570	5,080	4,910
10	3,930	4,150	6,900	6,720	6,420	4,150	4,740	6,380	8,240	3,450	4,900	4,910
11	3,930	4,150	6,900	6,680	6,380	4,150	4,770	6,380	8,160	3,340	5,050	4,910
12	3,930	4,150	6,900	6,680	6,380	4,150	4,770	6,270	8,060	3,230	5,050	4,910
13	3,930	4,150	6,900	6,640	6,380	4,180	4,770	6,380	7,880	3,180	4,830	4,880
14	3,960	4,080	6,860	6,640	6,340	4,210	4,840	6,450	*7,700	4,310	4,210	4,880
15	3,960	4,080	6,670	6,640	6,340	4,270	4,840	6,450	7,620	4,910	5,050	4,770
16	3,960	4,080	6,860	6,680	6,240	4,410	5,550	6,450	7,460	4,940	5,050	4,670
17	3,910	4,080	6,820	6,680	6,300	4,470	6,260	6,450	3,260	5,180	5,050	4,670
18	4,090	4,080	6,820	6,640	6,300	4,500	6,260	6,450	a2,060	5,190	5,030	4,670
19	4,180	4,080	6,820	6,640	6,260	4,500	6,260	6,450	a2,820	4,840	5,050	4,670
20	4,180	4,080	6,300	6,640	6,260	4,540	6,130	6,450	a3,380	4,870	5,020	4,640
21	4,180	4,040	5,260	6,440	6,220	4,540	6,120	6,300	a3,760	4,520	5,020	4,640
22	4,180	4,120	5,260	6,600	6,220	4,500	6,120	6,450	a3,960	4,560	5,020	4,640
23	4,180	4,120	4,700	6,600	6,160	4,500	6,120	6,450	a4,210	5,060	5,020	4,640
24	4,180	4,120	3,690	6,600	6,220	4,500	6,190	6,600	a4,360	4,540	5,020	4,640
25	4,110	4,120	3,720	6,600	6,180	4,500	6,260	7,060	a4,400	5,190	5,020	4,640
26	4,180	4,120	3,720	6,560	6,180	4,500	6,300	7,700	a4,400	5,190	5,020	4,640
27	4,180	4,120	3,720	6,560	6,180	4,540	6,300	8,600	a4,360	5,190	*5,050	4,640
28	*4,180	*4,120	5,500	6,560	*6,150	4,540	6,220	9,100	a4,300	*5,190	4,940	4,640
29	4,180	4,120	6,780	6,520	-	4,540	6,300	9,170	a4,250	5,160	4,940	4,600
30	4,180	4,120	6,780	6,520	-	4,590	*6,300	9,300	a4,210	5,120	5,020	4,600
31	4,180	-	*6,780	*6,520	-	4,670	-	9,300	-	5,120	4,920	-
Total	124,050	123,790	149,810	205,800	177,050	147,820	163,990	213,530	189,950	137,400	155,200	143,180
Mean	4,002	4,126	4,833	6,639	6,323	4,768	5,466	6,888	6,332	4,433	5,006	4,773
Ac-ft	246,000	245,500	297,100	408,200	351,200	293,200	325,300	423,500	376,800	272,500	307,800	284,000

Calendar year 1954: Max 32,200 Min 5 Mean 7,439 Ac-ft 5,385,000
Water year 1954-55: Max 9,300 Min 5 Mean 5,296 Ac-ft 3,831,000

* Discharge measurement made on this day.
a No gage-height record; discharge computed from spillway overflow.
Note.—Gates closed and river stage below Dec.5-8 intake; discharge estimated.

Helmand River below Kajakai Dam, Afghanistan
Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	4,600	4,450	4,670	*4,560	4,420	4,520	7,770	28,900	7,280	4,010	10,600	7,260
2	4,600	4,450	4,670	4,600	4,420	4,520	7,820	27,900	4,810	3,920	7,440	*7,260
3	4,600	4,450	*4,670	4,180	4,420	4,560	7,910	27,000	*5,380	3,720	6,730	7,260
4	*4,600	4,450	4,670	4,990	4,420	4,670	10,100	26,000	5,680	3,470	7,460	a5,200
5	4,600	4,450	4,670	4,640	4,450	4,670	17,700	25,000	6,010	3,500	8,240	a1,200
6	4,600	4,450	4,640	4,240	4,450	4,670	*24,200	23,900	6,180	*3,500	7,720	a1,200
7	4,560	4,450	4,640	4,240	4,450	4,700	*27,700	22,800	6,220	3,500	7,680	a1,200
8	4,560	4,450	4,640	4,240	4,450	4,740	32,100	21,800	6,180	3,500	7,680	a1,200
9	4,560	4,480	4,600	4,240	4,340	4,740	34,200	21,000	6,100	3,470	7,680	a5,100
10	4,560	4,480	4,600	4,210	4,280	4,780	*34,600	20,300	5,930	3,440	7,630	7,440
11	4,560	4,480	4,600	4,210	4,280	4,810	34,400	19,800	5,720	3,410	7,630	7,440
12	4,560	4,480	4,600	4,210	4,280	4,810	34,800	19,100	5,680	3,350	7,630	7,400
13	4,520	4,480	4,700	4,140	4,310	4,840	35,700	18,700	5,600	3,320	7,580	7,400
14	4,420	4,480	4,670	4,450	4,280	4,880	37,200	*18,000	5,570	3,300	7,580	7,350
15	4,560	4,480	4,670	4,450	4,280	4,880	38,800	17,600	5,180	3,470	7,530	7,350
16	4,560	4,480	4,670	4,450	4,280	4,920	40,000	16,900	4,840	3,950	7,530	7,350
17	4,560	4,480	4,670	4,450	4,280	4,920	a41,700	16,400	4,880	4,740	7,480	7,300
18	4,560	4,450	4,670	4,450	4,280	4,920	a42,600	15,700	4,880	7,120	7,480	7,300
19	4,560	4,280	4,670	4,450	4,310	5,060	a43,600	15,100	4,840	8,340	7,480	7,300
20	4,560	4,670	4,670	4,420	4,310	5,030	a44,100	14,300	4,780	8,790	7,480	7,260
21	4,520	4,670	4,640	4,420	4,310	5,060	a44,500	13,700	4,700	7,770	7,440	7,260
22	4,520	4,670	4,640	4,420	4,310	5,060	a44,400	13,200	4,670	7,170	7,440	7,260
23	4,520	4,670	4,640	4,380	4,310	4,920	a42,600	12,800	4,640	6,640	7,440	7,220
24	4,480	4,670	4,640	4,380	4,380	5,100	38,800	12,300	4,520	7,260	7,400	7,220
25	4,480	4,670	4,600	*4,380	4,450	5,140	37,100	12,000	4,450	9,270	7,400	7,220
26	4,480	4,670	4,600	4,380	4,480	5,140	35,500	11,700	4,380	9,680	7,350	7,220
27	4,480	4,670	4,600	4,380	4,520	5,180	34,000	11,400	4,340	10,100	7,350	7,220
28	4,450	4,670	4,600	4,380	*4,420	*5,180	32,100	11,000	*4,340	10,400	7,300	7,170
29	*4,450	4,670	4,600	4,200	4,520	6,180	31,000	10,800	4,040	*12,500	7,300	7,120
30	4,450	4,670	4,600	4,420		7,680	29,900	*10,600	4,040	15,600	7,300	7,120
31	4,450	-	4,600	4,420		7,720		10,300		13,500	7,120	
Total	140,540	136,020	143,820	135,980	126,690	158,000	966,900	546,000	155,860	195,710	235,100	189,800
Mean	4,534	4,534	4,639	4,386	4,369	5,097	32,230	17,610	5,195	6,313	7,584	6,327
Ac-ft	278,800	269,800	285,300	269,700	251,300	313,400	1,918,000	1,083,000	309,100	388,200	466,300	376,500

Calendar year 1955: Max 9,300 Min 2,060 Mean 5,354 Ac-ft 3,876,000
Water year 1955-56: Max 44,500 Min 1,200 Mean 8,553 Ac-ft 6,209,000

* Discharge measurement made on this day.
a No gage-height record; discharge computed from gate and spillway discharge.

Helmand River below Kajakai Dam, Afghanistan
Discharge, in cubic feet per second, water year October 1956 to September 1957

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	*7,120	4,740	4,670	5,720	6,510	6,420	7,580	39,800	29,300	10,800	7,500	7,300
2	7,120	4,740	*4,670	5,680	6,470	6,470	7,630	44,200	29,300	10,500	7,450	7,300
3	7,120	4,740	4,670	5,680	6,470	6,470	7,630	54,800	29,200	10,000	7,450	7,300
4	7,080	4,740	4,670	6,140	6,470	6,470	7,820	59,500	27,600	10,000	7,400	*7,300
5	7,080	4,740	4,670	5,720	6,420	6,510	11,300	59,800	*25,800	9,840	7,400	7,300
6	7,080	4,740	4,640	5,680	6,380	6,510	22,300	56,800	25,000	9,500	7,350	7,300
7	7,040	4,740	4,640	5,680	6,380	6,470	30,100	53,000	24,200	9,340	7,350	7,300
8	7,040	4,740	4,640	5,680	6,380	6,470	33,100	50,400	23,300	9,120	7,350	7,300
9	6,460	4,740	4,600	5,680	6,340	6,140	36,000	48,800	22,400	9,010	7,350	7,350
10	7,000	4,700	4,600	5,640	6,300	6,470	36,000	48,400	22,300	8,850	7,350	7,350
11	7,000	4,700	4,600	5,640	6,300	6,550	36,200	49,100	21,800	8,700	7,350	7,350
12	4,080	4,700	4,600	5,720	6,300	6,550	38,000	49,300	21,000	8,550	7,300	7,300
13	1,580	4,700	4,670	5,720	6,260	6,550	39,800	48,000	20,200	8,400	4,500	7,300
14	*1,580	4,700	4,640	5,640	6,260	6,550	42,200	45,800	19,300	8,300	1,180	7,400
15	1,580	4,700	4,640	5,640	6,220	6,510	45,600	43,400	18,700	8,150	1,180	7,400
16	1,580	4,700	4,640	5,640	6,220	6,470	46,600	41,500	17,900	7,950	*1,180	7,400
17	1,300	4,740	4,640	5,930	6,220	6,730	46,000	40,100	17,100	7,800	1,180	7,400
18	1,800	4,740	4,600	6,550	6,220	6,640	44,800	39,000	16,500	7,760	1,180	7,400
19	1,800	4,740	4,600	6,600	6,220	6,730	44,200	32,200	15,500	7,680	4,290	7,400
20	1,800	4,500	4,600	6,600	6,180	6,910	44,400	37,400	14,900	7,600	7,400	7,450
21	1,800	4,740	4,600	6,550	6,140	7,120	44,400	36,500	14,500	7,600	7,400	7,450
22	1,800	4,740	4,600	6,550	6,140	7,170	44,600	35,900	14,000	6,930	7,400	7,450
23	1,030	4,740	4,600	6,550	6,140	7,170	44,200	35,500	13,600	7,500	7,400	7,400
24	1,030	4,700	4,600	6,640	6,140	7,220	43,800	34,300	13,200	7,550	7,400	7,450
25	1,030	4,700	4,600	6,600	2,180	7,260	42,600	33,400	12,800	7,550	7,400	7,400
26	1,030	4,700	4,600	6,550	5	7,260	41,000	31,800	12,400	7,550	7,400	7,500
27	1,030	4,670	4,600	6,550	5	7,300	40,600	30,500	12,000	7,500	7,400	7,450
28	*1,810	4,670	4,600	6,340	*3,690	7,350	*37,500	29,700	11,600	7,500	7,350	7,450
29	3,820	4,670	*5,720	*6,550	-	7,400	*37,800	29,300	11,200	7,500	7,350	*7,450
30	4,740	4,670	5,720	6,550	-	*7,440	39,800	29,200	*11,000	7,500	7,350	7,400
31	4,740	-	5,720	6,470	-	7,530	-	29,200	-	*7,500	7,350	-
Total	118,100	141,280	146,660	188,880	156,960	210,810	1,043,560	1,296,600	567,600	260,030	191,890	221,300
Mean	3,810	4,709	4,731	6,093	5,606	6,800	34,790	41,830	18,920	8,388	6,190	7,377
Ac-ft	234,200	280,200	290,900	374,600	311,300	418,100	2,070,000	2,572,000	1,126,000	515,800	380,600	419,100

Calendar year 1956: Max 44,500 Min 1,030 Mean 8,514 Ac-ft 6,181,000
Water year 1956-57: Max 59,800 Min 5 Mean 12,450 Ac-ft 8,993,000

* Discharge measurement made on this day.
Note.—No gage-height record Oct. 17-22, Feb. 26, 27, May 3 to June 4; discharge computed from spillway and valve ratings.

Helmand River below Kajakai Dam, Afghanistan
Discharge, in cubic feet per second, water year October 1957 to September 1958

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	7,140	7,150	4,720	*7,500	7,200	7,200	7,950	22,500	9,920	*8,200	7,850	7,400
2	7,400	*7,150	4,720	7,500	7,150	7,200	8,000	21,600	9,760	8,200	*7,800	7,350
3	7,400	7,150	4,800	7,500	7,150	*7,250	8,050	20,700	9,590	8,200	7,800	7,350
4	7,450	7,200	4,800	7,500	7,150	7,250	8,100	19,800	9,150	8,150	7,800	7,300
5	7,450	7,200	4,800	7,500	7,150	7,250	8,100	*18,600	9,320	8,150	7,800	7,300
6	7,450	3,600	4,840	7,450	7,150	7,250	8,150	18,300	9,150	8,150	7,800	7,300
7	7,450	5	4,960	7,450	7,150	7,100	8,150	17,400	9,040	8,150	7,750	7,300
8	7,450	5	4,920	7,450	7,150	7,250	8,200	16,800	8,880	3,400	7,750	7,300
9	7,450	5	4,920	7,450	7,150	7,250	8,200	*16,000	8,760	4,050	7,700	7,300
10	7,450	5	4,920	7,450	7,150	7,250	8,200	15,200	8,660	8,100	7,700	7,200
11	7,300	5	6,040	7,450	7,200	7,250	8,200	14,900	8,500	8,100	7,650	7,200
12	7,300	5	7,400	7,400	7,200	7,350	8,200	14,400	8,400	8,050	7,650	7,200
13	7,300	5	7,400	7,400	7,200	7,350	8,200	13,800	8,350	8,050	7,650	7,200
14	7,450	5	7,400	7,400	7,200	7,350	8,300	13,600	8,300	8,050	7,600	7,200
15	7,300	380	7,400	7,400	7,200	7,400	8,400	13,300	8,250	8,100	7,600	7,100
16	7,300	750	7,400	7,050	7,200	7,400	10,200	12,800	*8,250	8,100	7,600	7,100
17	7,300	4,750	7,400	7,250	7,200	7,400	12,800	12,400	8,250	8,100	7,550	7,100
18	7,300	4,750	7,400	7,200	7,200	7,400	15,000	12,000	8,250	8,100	7,550	7,100
19	7,300	4,750	7,400	7,200	7,200	7,550	16,400	11,600	8,250	8,050	7,550	7,100
20	7,250	4,770	7,350	7,200	7,200	7,550	17,800	11,400	8,250	8,050	7,550	7,000
21	7,300	4,770	7,300	6,950	7,200	7,600	19,500	11,300	8,250	8,050	7,550	7,000
22	7,250	4,780	7,350	7,150	7,200	7,600	20,400	11,400	8,250	8,000	7,550	7,000
23	7,200	4,780	7,450	7,150	7,200	7,650	21,200	11,400	8,250	7,950	7,500	7,000
24	7,200	4,790	7,450	7,100	7,200	7,650	22,200	11,300	8,250	7,950	7,500	6,800
25	6,950	4,790	7,450	7,100	7,200	7,800	23,200	11,200	8,250	7,950	7,500	7,050
26	7,200	4,800	7,500	7,100	7,200	7,800	24,100	11,000	8,250	7,950	7,500	7,050
27	7,200	4,800	7,500	7,100	7,200	7,850	24,800	10,800	8,200	7,950	7,450	*7,000
28	7,200	*4,760	7,500	7,100	7,200	7,850	24,800	10,700	8,200	7,900	7,450	7,000
29	7,200	4,720	7,500	7,100	-	7,900	24,000	10,500	8,200	7,900	7,450	7,000
30	7,200	4,720	7,500	*7,100	-	7,950	23,200	10,200	8,200	7,850	7,450	6,950
31	7,200	-	7,500	7,150	-	*7,950	-	*9,920	-	7,850	*7,400	-
Total	226,290	107,350	202,990	225,800	201,150	231,850	422,000	436,820	257,580	240,800	236,000	214,250
Mean	7,300	3,578	6,548	7,284	7,184	7,479	14,070	14,090	8,586	7,768	7,613	7,142
Ac-ft	448,800	212,900	402,600	447,900	399,000	459,900	837,000	866,400	510,900	477,600	468,100	425,000

Calendar year 1957: Max 59,800 Min 5 Mean 12,810 Ac-ft 9,252,000
Water year 1957-58: Max 24,800 Min 5 Mean 8,230 Ac-ft 5,956,000

* Discharge measurement made on this day.
Note.—No gage-height record Nov. 4-27, Feb. 21 to Mar. 2, Apr. 10 to May 4; discharge computed from spillway and valve ratings.

Helmand River below Kajakai Dam, Afghanistan
Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	6,950	6,420	4,160	4,120	*4,160	4,320	*7,400	17,900	*9,810	7,700	7,350	6,900
2	6,900	6,420	4,160	4,160	4,160	*4,200	7,400	16,800	9,640	*7,700	7,350	6,900
3	*6,900	6,420	4,160	4,160	4,160	4,240	7,450	16,300	9,540	7,750	7,350	6,850
4	6,900	6,380	4,160	4,160	4,160	4,280	7,500	15,700	9,480	7,700	7,300	6,850
5	6,900	6,380	*4,160	4,160	4,160	4,320	7,500	15,500	9,480	7,700	7,300	6,850
6	6,850	6,380	4,160	4,160	4,120	4,360	7,600	15,300	9,370	7,700	7,300	6,800
7	6,850	6,330	4,160	4,160	4,120	4,360	7,600	15,100	9,150	7,700	7,250	6,420
8	6,800	6,330	4,160	4,160	4,120	4,400	7,650	14,600	8,930	7,700	7,200	5,970
9	6,800	6,330	4,120	*4,160	4,160	4,480	7,650	14,200	8,710	7,700	7,200	6,060
10	6,800	6,280	4,160	4,160	4,200	*4,520	7,500	13,700	7,850	7,650	7,200	6,060
11	6,800	6,280	4,160	4,160	4,160	*4,560	7,750	13,400	8,150	7,650	7,150	6,060
12	6,800	4,600	4,160	4,160	4,160	4,600	7,800	13,000	8,000	7,650	7,150	6,020
13	6,750	3,860	4,240	4,160	4,160	4,640	7,850	12,600	7,900	7,600	7,100	6,020
14	6,750	3,820	4,200	4,160	4,200	4,640	7,900	12,300	7,850	7,600	7,100	6,020
15	6,700	3,820	4,160	4,160	4,200	4,640	8,350	12,100	7,800	7,600	7,100	6,020
16	6,700	3,860	4,160	4,160	4,200	4,640	10,700	12,000	7,800	7,550	7,100	5,970
17	6,700	3,860	4,160	4,160	4,160	4,640	13,400	12,600	7,800	7,550	7,100	5,970
18	6,650	3,820	4,160	4,160	4,200	4,660	16,000	13,400	7,800	7,550	7,100	5,970
19	5,200	3,820	4,160	4,160	4,120	4,680	18,000	13,800	7,750	7,550	7,100	5,970
20	5,200	3,820	4,160	4,160	4,120	4,690	19,400	13,700	7,750	7,160	7,100	5,920
21	6,600	3,820	4,160	4,160	4,000	4,700	20,500	13,400	7,750	7,550	7,100	5,920
22	6,600	3,820	4,160	4,120	4,040	4,750	21,200	13,000	7,750	7,500	7,050	5,920
23	6,600	3,820	4,160	4,120	4,080	4,800	22,000	12,700	7,750	7,500	7,050	5,250
24	6,600	3,820	4,160	4,160	4,120	4,820	21,700	12,400	7,750	7,500	7,000	4,400
25	6,700	3,820	4,200	4,160	4,080	4,850	21,100	12,000	7,750	7,500	7,000	4,400
26	6,600	4,000	4,160	4,160	4,080	4,880	20,300	11,600	7,750	7,500	7,000	4,400
27	6,550	4,240	4,160	4,160	4,080	6,430	19,100	11,400	7,750	7,500	6,950	4,400
28	6,500	4,200	4,160	4,160	4,080	7,500	18,500	10,800	7,700	7,450	6,950	4,400
29	6,500	4,160	4,160	4,120	-	7,450	18,000	10,200	7,700	7,450	6,900	4,360
30	*6,460	4,240	4,160	4,160	-	7,450	*17,900	9,700	7,700	7,400	6,900	4,320
31	6,460	-	4,120	4,160	-	7,400	-	9,810	-	*7,350	*6,900	-
Total	205,070	145,170	129,040	128,800	115,760	154,900	392,700	411,010	247,910	234,660	220,700	173,370
Mean	6,615	4,839	4,163	4,155	4,134	4,997	13,090	13,260	8,264	7,570	7,119	5,779
Ac-ft	406,800	287,900	256,000	255,500	229,600	307,200	778,900	815,200	491,700	465,400	437,800	343,900

Calendar year 1958: Max 24,800 Min 3,400 Mean 8,070 Ac-ft 5,862,000
Water year 1958-59: Max 22,000 Min 3,820 Mean 7,011 Ac-ft 5,076,000

* Discharge measurement made on this day.
Note.—No gage-height record Oct. 19-29, Mar. 15-31, May 18-31; discharge computed from recorded range instage and valve ratings.

HELMAND RIVER BASIN

Helmand River below Kajakai Dam, Afghanistan

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	4,320	4,320	3,460	6,060	3,940	3,720	2,420	4,280	13,700	5,700	4,110	4,480
2	4,320	4,320	3,500	6,020	3,720	3,720	2,420	4,280	13,100	5,560	4,110	4,480
3	4,320	4,320	3,500	6,020	3,720	3,720	2,420	4,370	12,800	5,480	4,110	4,480
4	*4,280	4,320	3,500	5,970	3,720	3,720	2,420	4,370	12,600	5,340	*4,110	4,480
5	4,280	4,320	3,500	6,020	3,710	3,720	2,420	4,320	12,300	5,250	4,110	4,480
6	4,280	4,320	3,500	*5,970	3,710	3,720	2,420	4,320	12,000	5,160	4,160	*4,460
7	4,280	4,320	3,540	5,970	3,710	3,720	2,420	4,370	11,900	5,070	4,160	4,240
8	4,280	*4,320	3,540	5,920	3,700	3,720	3,140	5,480	11,600	4,980	4,110	4,240
9	4,280	*3,900	3,540	5,160	3,700	3,720	3,540	7,950	11,400	4,890	4,110	4,240
10	4,280	3,460	*6,060	3,940	3,690	3,720	3,580	10,400	11,200	4,800	4,110	4,240
11	4,280	3,500	6,420	3,940	3,690	3,700	3,580	12,500	10,800	4,700	4,110	4,240
12	4,280	3,500	6,420	3,940	3,680	3,700	3,620	14,700	10,500	4,600	4,360	4,240
13	4,280	3,500	6,420	3,940	3,680	3,700	3,620	16,500	10,200	4,500	4,560	4,240
14	4,280	3,460	6,420	3,940	3,680	3,700	3,700	18,300	9,960	4,400	4,560	4,240
15	4,240	3,460	6,420	3,940	3,680	3,700	3,740	20,000	9,590	4,300	4,560	4,240
16	4,240	3,500	6,330	3,940	3,690	3,700	3,900	21,300	9,150	4,200	4,560	4,240
17	4,240	3,500	6,330	3,940	3,690	3,700	3,860	22,200	8,820	4,160	4,560	4,240
18	4,240	3,500	6,330	3,940	3,690	3,700	3,960	23,000	8,200	4,110	4,560	4,240
19	4,240	3,500	6,330	3,940	3,690	3,700	3,900	23,000	7,900	4,110	4,560	4,240
20	4,240	3,460	6,330	3,900	3,690	3,700	3,940	22,900	7,600	4,110	4,560	4,240
21	4,230	3,460	6,330	3,900	3,700	4,200	3,980	22,300	7,300	4,110	4,560	4,200
22	4,280	3,460	6,240	3,900	3,700	4,200	3,980	21,600	7,100	4,110	4.560	4,160
23	4,280	3,460	6,240	3,900	3,700	4,200	4,050	20,700	6,950	4,110	4,560	4,200
24	4,280	3,460	6,240	3,900	3,700	4,200	4,070	19,600	6,750	4,110	4,560	4,110
25	4,280	3,460	6,240	3,900	3,700	*4,200	4,110	18,300	6,600	4,110	4,480	4,110
26	4,280	3,460	6,240	3,900	3,720	4,200	4,110	16,800	6,330	4,110	4,480	4,110
27	4,280	3,460	6,240	3,860	3,720	4,240	4,160	16,200	6,200	4,070	4,480	4,110
28	4,320	3,460	6,200	3,900	3,720	3,940	4,160	15,900	6,060	4,070	4,480	4,110
29	4,420	3,460	6,150	*3,900	3,720	3,580	*4,200	15,100	5,920	4,070	4,480	4,110
30	4,370	3,460	6,150	3,900	-	3,380	4,240	*14,700	5,790	4,110	4,480	*4,110
31	4,370	-	6,100	3,900	-	2,960	-	14,200	-	4,110	4,480	-
Total	132,920	111,400	169,760	139,270	107,560	117,300	105,960	443,940	280,220	140,510	135,750	127,550
Mean	4,288	3,713	5,476	4,493	3,709	3,784	3,532	14,320	9,341	4,533	4,379	4,252
Ac-ft	265,600	221,000	336,700	276,200	213,300	232,700	210,200	880,300	555,800	278,700	269,300	253,000

Calendar year 1959: Max 22,000 Min 3,460 Mean 6,832 Ac-ft 4,946,000
Water year 1959-60: Max 25,000 Min 2,420 Mean 5,497 Ac-ft 3,990,800

* Discharge measurement made on this day.

Note.--No gage-heights Dec. 11-27, Feb. 2 to Jan. 24, July 6-17, Aug. 12 to Sept. 5, Sept. 7-20; discharge computed from range lines and reservoir release.

Seraj Canal at Sangin, Afghanistan

Location.—Lat 32°03' N., long 64°50' E., on left bank about 100 meters upstream from office of the Governor of Sangin district in village of Sangin, about 500 meters downstream from canal inlet and control gate structure on Helmand River, 35 kilometers northeast of Girishk, and about 40 kilometers downstream from Kajakai dam on the Helmand River.
Records available.—October 1952 to September 1960.
Gage.—Staff gage read twice daily.
Average discharge.—8 years, 254 cfs (183,900 acre-ft per year)
Extremes.— Maximum daily discharges for the water years 1953-60 are given in the following table:

Water Year	Date	Maximum Gage Height (meters)	Discharge (cfs)
1953	May 1, 1953	1.68	445
1954	Apr. 21, 1954	—	593
1955	Dec. 25, 26, 1954	1.80	596
1956	Apr. 13, 14, 1956	2.00	612
1957	Mar. 19, 1957	2.00	612
1958	Dec. 15, 1957	1.34	397
1959	Mar. 3, 1959	1.74	519
1960	Apr. 15, 1960	1.44	328

Remarks.—Records good except those for periods of no gage-height record, which are poor. Water is diverted from left bank of Helmand River for irrigation of about 24,000 acres extending from Sangin to Yakchal and southwesterly toward Kala Bist.

Seraj Canal at Sangin, Afghanistan
Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	253	271	247	236	212	207	236	445	410	340	310	290
2	259	265	247	236	203	207	236	432	410	340	310	290
3	251	265	247	203	203	212	236	426	410	340	310	290
4	259	265	247	230	166	212	242	432	410	340	310	290
5	253	259	247	224	166	212	236	432	410	340	310	290
6	259	259	247	224	166	218	236	401	400	340	310	280
7	259	259	247	224	171	224	236	*426	400	340	310	280
8	265	265	247	224	212	224	236	426	400	340	310	280
9	271	259	247	224	224	224	236	426	400	340	310	280
10	271	265	242	224	224	224	236	426	400	340	310	280
11	271	265	242	218	230	224	230	426	390	340	310	280
12	277	259	236	212	230	224	230	426	390	340	310	280
13	277	259	242	218	224	230	224	426	390	340	310	280
14	283	259	242	212	224	224	224	426	390	340	310	280
15	283	259	247	224	224	230	224	426	390	340	310	280
16	283	236	247	230	230	236	218	426	380	340	310	260
17	283	242	247	224	230	230	212	426	380	340	310	*180
18	271	247	247	218	230	230	212	426	380	340	310	180
19	277	259	247	212	194	224	212	426	380	340	310	180
20	271	253	194	224	194	224	207	426	380	340	310	180
21	265	247	194	230	189	218	438	426	370	340	310	180
22	259	247	230	236	189	212	383	426	370	340	310	180
23	259	247	*230	236	189	218	438	426	370	340	310	180
24	259	247	224	236	194	224	432	426	370	340	310	212
25	259	236	224	236	194	218	321	426	370	340	310	212
26	259	236	230	224	203	224	321	426	360	340	310	224
27	259	247	230	230	203	224	414	*426	355	340	310	242
28	259	247	230	230	203	224	401	420	555	340	310	212
29	*265	247	230	224	-	224	247	420	*352	340	310	88
30	259	247	236	224	-	224	321	420	350	340	310	88
31	271	-	236	212	-	236	-	420	-	340	310	-
Total	8,251	7,618	7,350	6,959	5,721	6,886	8,275	13,194	11,522	10,540	9,610	7,048
Mean	266	254	237	224	204	222	276	426	384	340	310	235
Ac-ft	16,370	15,110	14,580	13,800	11,350	13,600	16,410	26,170	22,850	20,910	19,060	14,000

Calendar year 1952: Max - Min - Mean - Ac-ft -
Water year 1952-53: Max 445 Min 88 Mean 281 Ac-ft 204,300

* Discharge measurement made on this day.
Note.— No gage-height record May 8-26, May 28 to June 28, June 30 to Sept. 16, Sept. 18-25, discharge interpolated or computed on basis of Helmand River records.

Seraj Canal at Sangin, Afghanistan
Discharge, in cubic feet per second, water year October 1953 to September 1954

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	146	253	296	106	200	166	445	345	271	10	*171	327
2	259	*271	296	106	200	166	395	358	236	10	170	321
3	283	296	296	110	200	162	358	370	212	50	170	321
4	321	308	100	110	200	166	358	333	203	118	170	308
5	321	296	10	110	200	162	345	333	194	118	339	308
6	265	308	100	110	200	162	333	345	184	125	383	308
7	247	308	271	110	200	158	321	432	175	194	420	308
8	236	308	296	110	200	158	321	407	166	333	236	308
9	277	308	302	110	200	184	314	414	146	407	10	308
10	259	302	302	110	200	166	314	358	133	438	10	302
11	271	*12	296	110	200	166	333	358	121	443	407	302
12	283	12	302	110	200	184	426	333	114	457	407	302
13	271	12	302	110	200	189	426	321	103	463	401	302
14	283	100	302	110	200	224	420	296	95	463	401	290
15	259	247	296	110	200	158	420	283	95	457	395	283
16	259	271	296	110	200	175	407	364	92	463	395	277
17	259	271	296	110	333	175	414	407	88	463	389	277
18	259	271	296	110	308	175	414	414	88	457	383	277
19	259	271	296	110	236	175	450	395	88	457	383	271
20	259	271	296	110	203	175	500	383	88	451	370	277
21	259	271	290	110	198	166	*593	370	283	445	370	271
22	259	271	100	110	189	166	401	358	333	438	370	271
23	259	271	10	110	184	171	327	352	352	426	370	277
24	247	296	10	110	180	162	327	333	352	426	358	290
25	247	296	10	110	166	166	333	327	345	426	364	290
26	247	302	10	150	175	162	327	327	345	420	358	162
27	242	296	10	150	166	158	308	308	339	383	345	154
28	242	296	10	150	166	158	302	290	100	321	345	*150
29	247	302	50	150	-	158	302	203	10	259	*376	154
30	236	296	103	150	-	562	321	198	10	166	339	162
31	242	-	103	150	-	469	-	296	-	50	333	-
Total	8,003	7,593	5,953	3,842	5,704	5,944	11,255	10,611	5,361	10,137	9,938	8,158
Mean	258	253	192	124	204	192	375	342	179	327	321	272
Ac-ft	15,870	15,060	11,810	7,620	11,310	11,790	22,320	21,050	10,630	20,110	19,710	16,180

Calendar year 1953: Max 445 Min 10 Mean 278 Ac-ft 201,000
Water year 1953-54: Max 593 Min 10 Mean 253 Ac-ft 183,500

* Discharge measurement made on this day.
Note.— No gage-heights Nov. 12-14, Dec. 22-29, Jan. 3 to Feb. 16, June 28 to July 3; discharge computed on basis of discharge measurements, canal operation or interpolated.

Seraj Canal at Sangin, Afghanistan
Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	241	347	305	253	229	90	424	490	474	*312	277	340
2	284	347	298	259	229	a120	424	490	474	a310	277	362
3	347	347	319	253	229	a120	424	490	474	a310	277	362
4	347	347	340	259	229	a160	424	490	474	a310	284	362
5	347	347	100	259	229	a160	409	490	466	a300	284	362
6	347	347	0	265	229	a220	401	490	474	a300	291	362
7	355	347	0	265	223	a220	441	490	441	a290	305	362
8	362	355	0	259	223	a280	490	490	424	a290	305	362
9	362	355	241	253	217	a280	490	490	424	a280	305	362
10	370	347	474	253	217	a350	490	490	424	277	305	362
11	370	347	474	253	217	a350	490	490	441	271	305	362
12	370	355	441	253	212	a410	499	490	441	277	305	362
13	362	355	441	253	212	409	482	490	424	277	305	362
14	378	355	441	247	212	340	*466	490	*416	277	298	362
15	370	355	424	247	202	370	474	490	409	284	298	362
16	370	362	424	247	197	449	490	490	393	298	298	362
17	362	362	409	247	192	291	578	466	362	326	291	362
18	362	362	393	241	187	235	524	466	355	333	284	362
19	347	362	167	241	162	217	482	457	a360	347	291	362
20	347	347	154	241	159	207	490	466	a360	401	291	362
21	347	305	141	241	154	207	490	466	a350	424	298	362
22	347	305	138	241	150	333	490	466	a350	424	305	362
23	347	305	138	241	138	490	490	466	a340	424	305	362
24	347	305	347	241	56	490	490	474	a340	424	305	362
25	347	305	596	241	60	490	490	457	a330	401	305	362
26	333	305	596	235	60	432	490	457	a330	401	305	452
27	333	298	424	235	60	432	490	457	a330	370	*347	452
28	*347	*305	277	235	*64	441	490	466	a330	340	319	a430
29	347	291	259	235	-	552	490	474	a320	333	326	a430
30	347	298	*241	*229	-	424	490	474	a320	305	333	a430
31	347	-	253	229	-	424	-	474	-	277	333	-
Total	10,789	10,070	9,255	7,651	4,948	9,993	14,292	14,826	11,850	10,196	9,357	11,182
Mean	348	336	295	247	177	322	476	478	395	329	302	383
Ac-ft	21,400	19,970	18,660	15,180	9,810	19,820	28,350	29,400	23,500	20,220	18,560	22,180

Calendar year 1954: Max 596 Min 0 Mean 277 Ac-ft 200,300
Water year 1954-55: Max 596 Min 0 Mean 341 Ac-ft 246,800

* Discharge measurement made on this day.
a No gage-height record Feb. 25-27, Mar. 1-12, June 19-30, July 2-9, Sept. 28-30; discharge computed on basis of discharge measurements and interpolated gage heights.

HELMAND RIVER BASIN

Seraj Canal at Sangin, Afghanistan

Discharge in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	441	411	400	173	154	370	577	475	67	215	565	370
2	444	411	397	173	156	370	566	472	67	215	377	565
3	438	408	404	175	159	370	587	462	66	215	377	*556
4	438	404	*404	175	159	444	590	447	65	215	377	560
5	438	414	404	165	154	456	610	444	64	215	570	200
6	438	411	404	156	156	408	612	410	64	215	565	100
7	438	408	428	154	154	380	458	380	64	215	565	100
8	438	418	404	156	154	370	570	340	63	210	565	100
9	438	414	411	148	151	366	458	300	62	210	565	280
10	431	418	335	146	151	360	608	250	62	210	370	350
11	441	418	335	148	148	360	549	210	61	210	370	350
12	438	418	335	148	148	360	549	175	61	210	565	350
13	431	414	352	146	146	565	612	160	61	210	565	350
14	424	418	404	146	148	380	612	145	61	210	565	350
15	424	418	370	146	146	387	574	150	60	210	565	350
16	424	411	192	154	146	374	424	120	160	210	565	350
17	428	408	185	156	146	370	411	110	210	210	370	350
18	428	377	185	156	146	377	411	105	210	210	565	350
19	431	377	185	154	146	522	408	100	210	210	565	350
20	431	390	185	162	145	498	400	96	215	210	565	350
21	428	397	175	159	146	431	397	92	215	220	565	350
22	424	397	175	162	146	414	400	88	215	250	566	350
23	428	397	175	159	335	421	394	84	215	300	565	350
24	424	397	175	*162	335	421	458	80	215	350	565	350
25	421	397	175	165	404	387	408	77	215	370	565	350
26	424	397	175	156	499	384	390	75	215	375	565	350
27	424	400	175	162	421	380	370	73	*214	375	566	350
28	421	397	170	159	370	374	*472	71	215	*374	570	350
29	418	394	175	162	370	*387	468	70	215	370	570	349
30	414	394	170	159	-	384	472	*69	215	565	570	*268
31	418	-	168	159	-	380	-	68	-	565	570	-
Total	15,326	12,155	8,611	4,897	6,057	12,248	14,355	6,178	4,102	7,945	11,357	9,496
Mean	430	404	278	158	208	395	479	199	157	256	366	317
Ac-ft	26,430	24,060	17,080	9,710	11,970	24,290	28,470	12,250	8,140	15,760	22,530	18,840

Calendar year 1955: Max 578 Min 56 Mean 352 Ac-ft 254,600
Water year 1955-56: Max 612 Min 60 Mean 302 Ac-ft 219,500

* Discharge measurement made on this day.

Note.--No gage-heights May 6 to July 29, Sept. 5-28; discharge estimated on basis of discharge measurements and records for Helmand River below Kajakai Reservoir.

Seraj Canal at Sangin, Afghanistan
Discharge, in cubic feet per second, water year October 1956 to September 1957

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	251	300	300	310	80	242	159	268	0	370	*264	235
2	274	297	300	300	45	242	195	204	0	349	280	23 5
3	268	304	*321	310	25	248	596	352	36	118	287	242
4	251	304	300	304	13	248	600	526	26	134	287	238
5	254	300	307	268	8	248	600	544	*26	134	287	254
6	271	314	307	274	8	248	568	509	26	220	277	277
7	242	321	310	264	8	248	468	499	26	307	274	274
8	287	314	307	268	8	248	370	484	26	304	235	287
9	314	300	310	261	8	261	360	484	26	300	229	280
10	304	300	321	268	8	277	318	578	185	297	264	277
11	300	307	321	223	8	268	370	436	223	294	254	271
12	300	304	314	185	8	261	335	431	238	290	261	274
13	300	310	324	185	8	268	146	363	229	284	271	271
14	294	300	349	192	8	274	146	335	210	277	277	268
15	300	294	332	185	8	268	173	318	109	271	271	268
16	321	287	321	185	8	300	162	310	100	264	223	268
17	314	284	335	192	8	468	159	268	114	258	210	261
18	314	282	342	188	8	204	146	268	114	254	268	261
19	307	287	328	185	8	612	146	235	132	254	274	2 61
20	300	287	335	126	8	536	146	229	146	251	242	261
21	314	280	328	185	8	484	188	300	151	277	242	254
22	297	280	318	185	8	450	151	294	156	207	251	254
23	290	300	290	185	8	428	254	280	168	261	258	254
24	290	307	254	182	8	384	258	223	195	251	261	335
25	287	304	216	235	8	245	274	148	204	245	274	268
26	294	300	504	29	8	310	277	116	223	220	274	328
27	287	300	324	8	*8	447	261	28	232	226	261	251
28	287	363	318	8	8	242	264	4	235	251	261	242
29	*300	352	318	100		173	268	2	235	195	242	242
30	300	300	*304	*274		173	261	0	294	254	248	*242
31	307		310	134		170		0		258	245	
Total	9,019	9,082	9,868	6,198	355	9,475	8,619	9,036	4,085	7,875	8,052	7,933
Mean	291	303	318	200	12.7	306	287	291	136	254	260	264
Ac-ft	17,890	18,010	19,570	12,290	704	18,790	17,100	17,920	8,100	15,620	15,970	15,730

Calendar year 1956: Max 612 Min 60 Mean 286 Ac-ft 207,400
Water year 1956-57: Max 612 Min 0 Mean 245 Ac-ft 177,700

* Discharge measurement made on this day.
Note.— No gage-heights Jan. 28 to Feb. 26; discharge estimated on basis of discharge measurements and records for Helmand River below Kajakai Reservoir.

HELMAND RIVER BASIN

Seraj Canal at Sangin, Afghanistan
Discharge, in cubic feet per second, water year October 1957 to September 1958

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	242	248	53	96	30	254	*287	287	*229	280	210	201
2	242	248	53	96	32	251	280	284	229	*280	251	140
3	242	254	53	96	31	*254	280	284	223	280	*274	146
4	242	254	53	96	33	251	274	280	216	280	284	146
5	238	254	53	91	176	258	274	287	216	277	280	204
6	235	254	91	91	210	268	235	*242	216	274	277	204
7	235	134	91	73	225	268	242	242	216	271	274	204
8	235	20	261	66	238	271	274	238	216	271	274	204
9	235	20	*261	66	242	268	274	216	201	4	268	216
10	235	20	294	56	235	268	274	210	192	24	268	213
11	235	20	328	54	201	274	268	204	173	235	268	223
12	235	20	563	47	238	271	268	204	173	229	268	226
13	235	0	328	45	235	261	268	204	159	235	264	251
14	235	0	261	43	232	268	271	201	0	235	261	245
15	235	0	397	43	238	294	274	198	0	235	261	261
16	235	42	109	37	245	280	268	204	0	232	258	251
17	235	45	109	34	235	287	274	204	0	229	248	258
18	235	47	109	30	242	300	274	204	170	226	248	290
19	235	124	109	30	245	300	280	204	261	223	248	297
20	235	80	109	30	251	304	280	204	274	223	242	274
21	235	45	109	30	248	307	280	204	274	223	235	261
22	235	40	109	30	251	307	284	210	274	223	229	245
23	248	64	109	30	254	204	284	216	274	220	229	235
24	248	134	104	30	254	242	287	235	274	220	229	235
25	248	47	104	30	251	268	284	235	274	220	229	242
26	248	43	104	30	251	271	287	235	280	223	229	235
27	248	43	100	30	258	271	287	235	280	223	229	235
28	248	54	100	30	254	242	294	235	280	223	154	235
29	251	*56	96	30	-	268	287	235	280	216	21	238
30	251	53	96	28	-	268	284	229	280	210	*146	235
31	251	-	96	28	-	268	-	229	-	210	134	-
Total	7,442	2,663	4,612	1,546	5,833	8,366	8,277	7,099	6,134	6,954	7,290	6,850
Mean	240	88.8	149	49.9	208	270	276	229	204	224	235	228
Ac-ft	14,760	5,280	9,150	3,070	11,570	16,590	16,420	14,080	12,170	13,790	14,460	13,590

Calendar year 1957: Max 612 Min 0 Mean 209 Ac-ft 151,400
Water year 1957-58: Max 397 Min 0 Mean 200 Ac-ft 144,900

* Discharge measurement made on this day.

HELMAND RIVER BASIN

Seraj Canal at Sangin, Afghanistan
Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	235	238	232	129	140	173	162	287	280	271	216	268
2	238	229	198	151	134	213	216	274	277	264	223	277
3	232	226	223	168	134	519	226	274	274	261	223	287
4	235	238	204	168	132	146	245	280	274	268	242	287
5	235	235	198	173	129	146	254	280	268	268	245	280
6	232	235	*91	173	114	134	268	280	268	268	254	280
7	226	232	91	173	96	129	268	274	268	274	248	261
8	223	229	86	162	96	129	261	268	268	268	242	261
9	223	229	86	162	145	185	251	268	268	268	242	274
10	220	223	82	162	146	118	254	268	280	274	242	274
11	216	223	104	156	146	118	251	264	280	274	251	274
12	210	223	129	156	146	114	248	261	261	274	261	287
13	210	226	185	156	146	109	251	268	254	280	261	287
14	210	151	356	162	146	129	268	271	254	280	254	300
15	210	52	50	140	151	36	280	274	254	280	251	314
16	210	13	56	146	156	18	280	274	254	287	274	314
17	207	7	78	146	162	40	268	274	254	287	274	307
18	204	0	47	129	165	40	284	268	254	287	274	300
19	204	0	82	118	156	148	294	268	261	287	274	294
20	204	0	82	129	134	173	294	274	261	287	280	287
21	132	0	82	129	129	185	300	274	261	287	280	287
22	258	0	78	124	114	185	304	277	268	287	280	287
23	204	0	78	124	82	185	300	284	268	287	280	280
24	201	0	73	124	37	192	307	287	268	287	280	280
25	204	0	78	129	30	198	307	287	271	287	280	277
26	198	0	78	129	20	198	304	287	268	287	280	274
27	198	0	78	129	20	201	294	287	268	280	280	245
28	198	0	78	129	*140	195	294	294	271	280	280	70
29	204	0	78	134	-	198	*294	294	268	280	277	35
30	*213	0	76	140	-	192	294	294	268	280	*274	36
31	235	-	73	*140	-	*198	-	294	-	280	274	-
Total	6,629	3,209	3,510	4,490	3,347	4,944	8,121	8,608	7,991	8,629	8,096	7,784
Mean	214	107	113	145	120	159	271	278	266	278	261	259
Ac-ft	13,150	6,360	6,960	8,910	6,640	9,810	16,110	17,070	15,850	17,120	16,060	15,440

Calendar year 1958: Max 307 Min 0 Mean 196 Ac-ft 142,200
Water year 1958-59: Max 519 Min 0 Mean 206 Ac-ft 149,500

* Discharge measurement made on this day.

HELMAND RIVER BASIN

Seraj Canal at Sangin, Afghanistan
Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	58	210	116	154	210	232	204	176	268	82	314	277
2	39	210	314	143	210	223	204	245	274	220	*307	280
3	38	210	151	154	210	216	204	258	274	235	304	280
4	*151	216	140	210	204	216	198	258	268	254	300	280
5	151	216	35	*185	204	216	192	258	268	245	300	*280
6	151	213	20	185	192	216	238	258	268	235	300	280
7	151	210	20	179	192	229	254	258	268	207	300	280
8	151	204	24	179	192	232	254	258	261	204	318	280
9	151	*204	*24	185	192	223	254	258	261	204	321	280
10	151	204	25	185	195	216	254	274	261	204	321	280
11	242	204	26	173	204	274	254	297	254	201	321	280
12	251	204	26	185	204	294	287	300	254	185	321	284
13	254	168	28	185	210	290	318	304	254	179	321	287
14	232	162	114	185	216	280	300	307	254	168	321	284
15	210	134	37	192	216	280	328	300	251	162	321	280
16	210	134	18	192	216	254	229	300	248	146	321	280
17	207	132	18	192	216	254	118	300	248	146	310	280
18	204	129	17	204	216	254	30	300	248	129	297	280
19	204	124	0	204	216	254	8	300	242	129	294	280
20	204	118	109	204	223	254	5	307	220	129	300	280
21	198	118	118	223	223	254	5	304	207	35	307	287
22	204	118	104	220	223	254	7	300	201	36	307	294
23	192	118	100	210	268	254	7	300	185	36	297	297
24	198	118	109	210	268	*254	7	300	185	34	297	300
25	198	100	114	213	271	254	7	300	173	34	294	300
26	198	56	124	216	274	229	8	300	168	34	294	300
27	207	38	124	216	274	204	9	300	165	76	274	300
28	216	40	124	216	274	204	26	294	37	242	274	300
29	220	40	129	213	251	192	*26	287	37	314	277	300
30	220	40	118	*210	-	192	22	287	36	314	280	*307
31	210	-	129	210	-	192	-	*268	-	314	280	-
Total	5,651	4,392	2,555	6,012	6,464	7,390	4,257	8,756	6,538	5,133	9,393	8,597
Mean	182	146	82.4	194	223	238	142	282	218	166	303	286
Ac-ft	11,210	8,710	5,070	11,920	12,820	14,660	8,440	17,370	12,970	10,180	18,630	17,050

Calendar year 1959: Max 519 Min 0 Mean 204 Ac-ft 149,000
Water year 1959-60: Max 328 Min 0 Mean 206 Ac-ft 149,000

* Discharge measurement made on this day.

HELMAND RIVER BASIN

Musa Qala River at Musa Qala, Afghanistan

Location.—Lat 32° 20' N., long 64° 46' E., on left bank at south end of village of Musa Qala, about 26 kilometers upstream from Helmand River, and 60 kilometers north of Girishk.
Drainage area.—1,450 sq mi, approximately.
Records available.—April 1952 to September 1960.
Gage.—Staff gage read twice daily. Altitude of gage is about 970 meters (from comparison with Helmand River below Kajakai Dam elevation 960 meters).
Average discharge.—8 years, 416 cfs (301,200 acre-ft per year).
Extremes.—Maximum and minimum discharges for the water years 1953-60 are given in the following table.

Water Year	Maximum			Minimum Daily	
	Date	Gage Height (meters)	Discharge (cfs)	Date	Discharge (cfs)
1953	Feb. 14, 1953	—	*6,620	Aug. 25 to Sept. 30, 1953	0
1954	Apr. 5, 1954	1.56	7,600	Aug. 20-22, 24-28, 1954	2
1955	Mar. 14, 1955	2.53	[a]38,000	Sept. 21-27, 1955	2
1956	Dec. 13, 1955	1.78	16,200	Nov. 16-30, 1955	2
1957	Mar. 17, 1957	3.60	[a]71,000	Oct. 1-10, 1956	9
1958	Dec. 11, 1957	—	*2,450	Aug. 5, 1958	6
1959	Mar. 3, 1959	—	*3,500	Nov. 24, 1958	4
1960	Apr. 18, 1960	2.93	*4,500	Oct. 1, 2, 1959	20

* Mean daily.
[a] Slope-area measurement.

Remarks.—Records poor prior to May 1954, fair thereafter.
Many small diversions for irrigation upstream and downstream.

HELMAND RIVER BASIN

Musa Qala River at Musa Qala, Afghanistan

Discharge, in cubic feet per second, period April to September 1952

Date	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1							-	108	34	10	8	1
2							-	100	34	8	8	1
3							-	195	27	8	8	1
4							-	243	27	8	6	1
5							-	195	21	12	6	1
6							-	173	21	12	6	1
7							-	132	21	12	4	1
8							-	116	21	10	2	1
9							-	100	18	8	2	1
10							-	91	18	8	2	1
11							-	83	18	8	2	1
12							-	68	16	8	2	1
13							-	54	16	8	2	2
14							-	43	16	8	2	1
15							-	39	16	8	2	1
16							-	34	14	8	2	1
17							-	34	14	8	2	2
18							-	39	14	8	2	2
19							-	39	12	8	2	2
20							-	34	12	8	1	2
21							219	34	12	8	1	2
22							219	34	12	8	1	2
23							195	31	12	8	1	2
24							195	34	12	8	1	4
25							173	34	12	8	0	4
26							151	31	12	8	0	3
27							140	31	12	8	0	3
28							132	34	12	8	0	2
29							124	39	12	8	0	2
30							116	34	10	8	0	2
31							-	34	-	8	0	-
Total							-	2,290	508	264	75	51
Mean							-	73.9	16.9	8.5	2.4	1.7
Ac-ft							-	4,540	1,010	512	148	101

Calendar year : Max Min Mean Ac-ft

Water year : Max Min Mean Ac-ft

HELMAND RIVER BASIN

Musa Qala River at Musa Qala, Afghanistan
Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2	2	6	8	12	132	243	34	116	16	8	0
2	2	2	6	8	12	151	219	34	162	16	6	1
3	2	2	6	8	16	162	195	27	243	16	6	1
4	2	2	6	8	27	219	184	27	315	16	6	1
5	2	2	6	10	43	243	173	27	402	16	6	1
6	2	2	6	12	83	279	151	27	446	16	6	1
7	2	2	6	12	116	344	132	27	350	16	6	1
8	4	2	6	12	184	431	116	27	267	16	6	2
9	8	2	8	12	267	402	195	21	200	16	6	2
10	8	2	8	16	640	373	373	21	116	16	6	2
11	2	2	8	16	1,400	344	762	21	100	16	6	2
12	2	2	7	16	2,460	315	1,400	21	83	16	4	2
13	2	2	8	21	3,210	291	2,130	21	68	16	4	2
14	2	2	8	27	6,620	267	2,810	21	54	16	4	4
15	2	2	8	21	d2,000	243	3,830	21	43	16	*4	2
16	2	2	12	16	d1,000	219	1,000	21	34	16	4	3
17	2	2	12	14	d500	195	d500	21	27	16	4	3
18	2	2	12	14	d300	195	267	21	21	16	2	3
19	2	2	12	12	219	195	d200	21	21	16	2	3
20	2	2	12	12	195	193	116	21	21	16	2	3
21	2	2	12	12	173	151	100	21	21	16	1	3
22	2	2	12	12	173	132	83	21	21	16	1	3
23	2	2	12	12	151	195	68	21	16	16	1	3
24	2	2	12	12	151	243	54	21	16	16	1	3
25	3	2	8	12	151	315	54	27	16	16	0	3
26	4	2	8	8	83	431	43	34	16	12	0	3
27	4	4	8	8	83	416	43	43	16	12	0	3
28	3	4	8	8	83	344	43	54	16	12	0	3
29	2	5	8	8	-	315	34	68	16	12	0	3
30	2	5	7	8	-	291	34	83	16	8	0	3
31	2	-	10	12	-	267	-	100	-	8	0	-
Total	82	70	268	387	20,352	8,275	15,552	975	3,259	464	102	69
Mean	2.6	2.3	8.6	12.5	727	265	518	31.4	109	15.0	3.3	2.3
Ac-ft	162	139	532	768	40,370	16,400	30,850	1,930	6,460	920	202	137

Calendar year : Max - Min - Mean - Ac-ft -
Water year 1952-53: Max 6,620 Min 0 Mean 137 Ac-ft 98,870

* Discharge measurement made on this day.
d Doubtful gage-height record; discharge estimated on basis of recession curve or interpolated.
Note.—No gage-height record Sept. 16-30; discharge estimated on basis of known low water conditions.

Musa Qala River at Musa Qala, Afghanistan
Discharge, in cubic feet per second, water year October 1953 to September 1954

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	5	10	20	500	34	303	460	a400	75	18	*3	2
2	5	10	20	291	34	255	1,400	*373	75	18	3	2
3	5	10	20	231	34	243	1,270	358	75	18	3	2
4	5	10	20	184	34	219	5,170	315	75	18	3	2
5	5	10	20	151	34	195	*5,880	303	68	18	3	2
6	5	10	20	108	34	184	1,670	966	60	18	2	2
7	5	10	20	21	34	184	4,840	830	60	18	2	2
8	5	10	20	43	291	184	5,170	*431	60	18	3	2
9	5	10	20	34	2,650	173	3,370	402	60	18	3	2
10	5	10	20	31	3,920	416	2,730	373	60	18	3	2
11	5	10	30	27	2,460	303	2,810	358	60	a15	3	2
12	5	10	30	27	1,450	279	2,060	315	60	a10	3	2
13	5	10	30	27	1,560	279	1,140	303	49	*4	3	*3
14	5	10	30	27	1,140	279	600	279	39	a4	3	2
15	5	10	30	27	1,220	303	358	243	*24	a4	3	2
16	5	10	30	27	2,060	358	315	267	21	a4	3	2
17	5	10	30	27	966	402	279	243	18	a4	3	2
18	5	10	30	27	500	267	243	231	18	a4	4	2
19	5	10	30	27	416	267	207	207	14	a4	3	2
20	5	10	30	27	388	402	195	173	18	a4	2	2
21	5	10	40	27	373	640	373	162	18	a4	2	3
22	5	10	40	27	330	694	1,220	151	18	a4	2	2
23	5	10	40	27	330	460	500	132	18	a4	*3	2
24	5	10	40	27	330	a400	358	124	18	a4	2	3
25	5	10	40	27	303	a450	279	108	18	a4	2	3
26	5	10	40	27	303	a500	207	108	18	a4	2	2
27	5	10	40	27	267	a480	140	100	18	a4	2	2
28	5	10	100	68	303	431	358	91	18	a4	2	2
29	5	10	200	83	-	388	388	83	18	a4	3	3
30	5	10	402	43	-	358	a400	83	18	a4	5	3
31	5	-	330	34	-	291	-	75	-	a4	3	-
Total	155	300	1,812	2,281	21,798	10,587	44,390	8,587	1,169	281	86	66
Mean	5	10	58.5	73.6	778	342	1,480	277	38.9	9.0	2.8	2.2
Ac-ft	307	595	3,590	4,520	43,240	21,000	88,050	17,030	2,320	557	171	131

Calendar year 1953: Max 6,620 Min 0 Mean 141 Ac-ft 102,000
Water year 1954 : Max 5,880 Min 2 Mean 251 Ac-ft 181,600

* Discharge measurement made on this day.
a No gage-height record; discharge interpolated.
Note.—No gage-height record Oct. 1 to Dec. 29; discharge estimated on basis of known low water conditions at the station.

HELMAND RIVER BASIN

Musa Qala River at Musa Qala, Afghanistan
Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3	5	3	5	6	4	1,090	100	49	16	12	6
2	4	5	3	6	6	4	966	83	43	16	14	6
3	4	5	3	7	8	4	620	83	39	16	14	5
4	4	5	3	6	8	4	560	83	39	18	14	5
5	4	4	3	7	8	4	480	247	34	18	12	5
6	4	*4	4	8	8	4	431	1,140	27	18	7	5
7	*4	4	4	8	8	6	373	*446	24	18	*6	5
8	4	4	4	8	6	4	330	315	21	18	6	5
9	3	3	3	8	6	4	291	279	21	16	6	4
10	3	3	3	7	7	4	243	267	18	16	8	4
11	3	3	3	7	6	4	195	255	14	16	8	3
12	3	3	4	6	6	68	267	243	12	16	8	3
13	4	3	4	6	6	1,360	231	219	12	16	8	4
14	4	4	4	6	6	*6,000	219	195	11	18	8	5
15	4	4	4	6	5	2,520	184	173	11	18	8	4
16	4	3	4	6	6	1,720	162	162	10	18	8	4
17	4	3	4	6	5	1,500	140	151	10	18	7	4
18	4	3	*4	*6	5	1,360	124	140	12	18	7	3
19	4	4	4	8	5	1,140	108	132	*12	18	7	3
20	4	4	4	8	5	1,270	75	124	12	16	7	*4
21	4	4	4	7	6	2,390	*219	124	14	16	6	*2
22	4	3	4	6	6	2,260	100	108	14	18	6	2
23	4	3	4	7	6	2,000	195	100	14	18	7	2
24	4	3	4	6	*6	1,560	184	100	14	16	7	2
25	4	4	5	7	6	1,360	173	91	14	16	8	2
26	4	3	5	7	6	*966	173	83	14	16	7	2
27	4	3	5	6	4	932	140	83	14	16	7	2
28	4	*3	5	8	4	830	151	75	14	14	7	3
29	4	3	5	8	-	1,450	132	68	14	14	7	4
30	4	3	5	8	-	2,130	116	60	14	14	6	3
31	4	-	5	8	-	1,400	-	54	-	14	6	-
Total	119	108	123	213	170	34,262	8,672	5,783	571	514	249	111
Mean	3.8	3.6	4.0	6.9	6.1	1,105	289	187	19.0	16.6	8.0	3.7
Ac-ft	236	214	244	422	337	67,960	17,200	11,470	1,130	1,020	494	220

Calendar year 1954: Max 5,880 Min 2 Mean 245 Ac-ft 177,700
Water year 1954-55: Max 6,000 Min 2 Mean 139 Ac-ft 101,000

* Discharge measurement made on this day.
Note.--Gage-height from graph of gage readings Mar. 14, 15, 20, 21, 29, 30, May 5-7.

HELMAND RIVER BASIN

Musa Qala River at Musa Qala, Afghanistan

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3	3	3	133	164	2,400	1,300	600	146	53	133	8
2	3	3	3	164	164	2,600	1,400	600	138	50	85	8
3	3	3	3	142	150	6,000	1,500	590	130	49	57	8
4	3	3	3	142	150	7,500	1,600	580	125	48	57	8
5	3	3	3	142	150	10,000	1,700	560	120	46	50	8
6	3	3	66	142	142	8,500	1,900	540	115	45	50	8
7	3	3	806	142	133	7,000	2,100	520	113	44	50	8
8	3	3	*254	133	133	6,000	2,300	490	110	42	40	8
9	3	3	116	133	133	5,000	2,500	*447	108	41	40	8
10	3	3	150	133	125	4,500	3,500	430	*105	39	40	8
11	3	3	125	133	116	5,000	3,300	410	100	38	30	8
12	3	3	116	133	116	6,000	3,000	380	96	38	30	8
13	3	3	5,120	133	125	7,000	2,700	360	95	38	30	8
14	3	3	410	133	133	7,000	2,300	330	92	38	20	8
15	3	3	142	133	133	7,000	2,000	320	90	*38	20	8
16	3	2	133	150	125	6,800	1,750	320	88	38	20	8
17	3	2	133	1,490	125	6,000	1,500	330	86	178	10	8
18	3	2	133	1,360	116	4,500	1,300	325	84	370	10	8
19	3	2	133	290	*116	3,000	1,100	325	80	234	10	8
20	3	2	133	220	116	2,000	1,000	310	78	133	9	8
21	*3	2	150	206	116	1,700	800	300	76	150	8	8
22	3	2	150	192	116	2,000	700	290	73	133	*8	8
23	3	2	142	178	116	2,500	600	270	72	133	8	8
24	3	2	133	178	116	3,500	500	250	69	116	8	8
25	3	*2	125	178	178	4,500	430	230	67	85	8	8
26	3	2	116	164	3,000	4,700	380	220	64	100	8	8
27	3	2	116	164	6,000	4,000	350	210	62	85	8	8
28	3	2	116	164	4,000	3,000	370	200	58	192	8	8
29	3	2	116	*150	3,000	2,300	650	185	56	234	8	8
30	3	2	108	150	-	1,500	610	175	54	220	8	8
31	3	-	116	164	-	1,200	-	155	-	178	8	-
Total	93	75	9,353	7,469	19,307	144,700	45,640	11,252	2,750	3,222	877	240
Mean	3	2.5	302	241	666	4,668	1,521	363	91.7	104	28.3	8
Ac-ft	184	149	18,550	14,810	38,290	287,000	90,530	22,320	5,455	6,391	1,740	476

Calendar year 1955: Max 6,000 Min 2 Mean 165 Ac-ft 119,100
Water year 1955-56: Max 10,000 Min 2 Mean 669 Ac-ft 485,000

* Discharge measurement made on this day.

Note.--No gage-heights Mar. 5, 11, 17-21, 24, 30, Apr. 11 to July 14, Aug. 4 to Sept. 30; discharge computed on basis of field visits and records for Kash River at Dilaram.

HELMAND RIVER BASIN

Musa Qala River at Musa Qala, Afghanistan

Discharge, in cubic feet per second, water year October 1956 to September 1957

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	9	29	29	43	850	600	3,700	9,000	878	96	74	17
2	9	29	29	43	750	620	3,700	7,000	842	94	83	17
3	9	29	29	43	700	640	3,700	5,400	842	93	83	20
4	9	29	29	43	*671	660	3,700	4,600	806	92	83	20
5	9	29	29	43	640	680	5,000	4,100	742	91	100	20
6	9	25	25	43	620	700	9,800	3,800	714	90	15	20
7	9	20	25	48	620	720	8,000	3,500	686	90	15	20
8	9	20	29	48	600	740	6,200	3,400	658	90	17	18
9	9	20	29	48	600	860	5,400	3,400	630	90	17	29
10	9	20	29	48	600	980	4,500	3,300	470	90	18	48
11	10	20	29	48	600	930	4,300	3,360	370	90	20	48
12	10	20	29	52	600	900	4,200	3,200	290	90	20	57
13	10	20	29	74	600	900	4,400	2,880	280	90	20	66
14	10	20	29	66	590	900	4,700	2,870	270	90	20	66
15	10	20	29	57	590	900	5,400	2,410	260	90	20	66
16	10	20	*29	57	590	900	6,200	2,280	*262	90	18	61
17	10	20	34	52	590	*50,000	6,800	2,090	262	90	18	57
18	10	20	34	52	590	30,000	6,600	1,920	248	92	18	60
19	10	20	34	52	590	15,000	5,800	1,810	248	100	20	46
20	10	20	34	66	590	9,000	4,800	1,750	234	125	20	42
21	13	20	34	83	580	7,500	4,500	1,540	206	164	20	37
22	13	20	34	133	580	6,200	4,200	1,400	206	178	29	31
23	13	20	34	350	580	5,600	3,900	1,310	178	178	29	27
24	17	20	38	430	580	5,100	3,800	1,310	150	192	25	23
25	17	20	38	1,000	580	4,600	3,700	1,220	142	206	25	*20
26	17	29	38	1,700	580	4,300	3,700	1,130	133	100	20	20
27	17	29	38	1,550	580	4,000	3,700	1,060	125	43	29	29
28	17	29	38	1,400	580	3,900	3,700	1,060	116	*48	29	43
29	17	29	38	1,200	-	3,800	3,900	1,020	116	61	25	34
30	17	29	38	1,050	-	3,700	7,600	914	100	74	20	38
31	18	-	43	940	-	3,700	-	914	-	85	18	-
Total	366	695	1,005	10,862	17,221	169,050	149,600	84,748	11,464	3,190	964	1,100
Mean	11.8	23.2	32.4	350	615	5,453	4,987	2,734	382	103	31.1	36.7
Ac-ft	726	1,378	1,989	21,544	34,157	335,300	296,730	168,100	22,740	6,329	1,912	2,182

Calendar year 1956: Max 10,000 Min 8 Mean 649 Ac-ft 471,100
Water year 1956-57: Max 50,000 Min 9 Mean 1,234 Ac-ft 893,100

*Discharge measurement made on this day.

Note.—No gage-heights Oct. 1-20, Jan. 25 to May 10, June 13-15, July 1-20, Sept. 18-24; discharge computed on basis of field visits and records for Kash River at Dilaram.

Musa Qala River at Musa Qala, Afghanistan
Discharge, in cubic feet per second, water year October 1957 to September 1958

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	38	48	330	234	602	370	602	83	57	20	13	20
2	38	52	290	206	1,440	370	602	66	57	20	6	29
3	38	52	330	206	1,060	350	490	57	57	20	20	20
4	38	57	490	192	914	330	450	48	66	20	13	20
5	38	57	330	178	842	330	450	48	66	29	6	29
6	38	66	986	178	806	310	410	48	57	20	10	25
7	34	390	914	150	770	290	370	48	38	25	13	25
8	38	574	770	150	714	310	330	48	29	29	17	20
9	29	330	714	178	686	450	290	48	20	29	17	20
10	29	220	986	248	658	546	262	48	20	20	66	20
11	29	178	2,450	262	630	546	290	48	20	25	48	20
12	29	178	1,130	290	602	546	262	48	20	29	29	20
13	29	206	742	290	602	546	206	48	18	29	20	20
14	29	206	658	330	546	546	206	48	18	29	17	20
15	38	178	574	330	490	518	234	48	20	29	17	20
16	38	178	490	310	490	490	248	57	20	29	17	18
17	38	150	450	290	470	490	290	57	22	29	17	20
18	38	150	410	276	450	490	234	57	26	29	17	29
19	38	914	390	262	450	450	234	52	30	29	17	29
20	38	1,500	370	262	430	470	262	57	34	29	17	20
21	38	658	330	290	410	450	290	66	35	29	17	17
22	43	450	*330	290	430	450	234	83	36	29	17	20
23	48	574	330	310	390	410	220	83	35	20	18	17
24	48	878	310	310	370	370	206	100	30	13	20	17
25	48	742	290	330	370	370	178	91	25	20	18	17
26	48	574	262	370	390	370	150	83	20	20	17	20
27	*48	490	248	370	370	410	150	57	20	20	17	17
28	48	450	234	370	370	714	125	57	20	17	17	17
29	48	410	234	390	-	742	100	48	29	17	20	17
30	48	370	234	370	-	714	66	48	29	17	20	17
31	48	-	234	370	-	658	-	48	-	20	20	-
Total	1,215	11,280	16,840	8,592	16,752	14,406	8,441	1,826	974	740	598	620
Mean	39.2	376	543	277	598	465	281	58.9	32.5	23.9	19.3	20.7
Ac-ft	2,410	22,370	33,400	17,040	33,230	28,570	16,740	3,622	1,932	1,468	1,186	1,230

Calendar year 1957: Max 50,000 Min 17 Mean 1,308 Ac-ft 947,200
Water year 1957-58: Max 2,450 Min 6 Mean 225 Ac-ft 163,200

* Discharge measurement made on this day.
Note.— No gage-heights Nov. 20, Dec. 11, June 17-24; discharge computed on basis of field visits and records for Kash River at Dilaram.

Musa Qala River at Musa Qala, Afghanistan
Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	17	11	14	104	213	1,675	1,860	602	178	100	38	20
2	15	12	13	112	213	3,000	1,980	602	192	100	34	20
3	14	10	13	146	213	3,500	1,920	602	206	100	25	20
4	14	13	13	192	220	2,200	1,860	602	178	74	25	20
5	14	11	14	150	213	2,000	1,780	490	178	74	25	20
6	13	15	14	138	213	1,700	1,580	490	164	83	25	20
7	15	14	14	133	213	1,550	1,520	490	142	83	25	20
8	16	13	14	125	213	1,500	1,490	450	142	83	25	20
9	15	9	15	125	199	2,000	1,540	410	150	83	18	20
10	15	8	16	120	602	3,000	1,460	410	133	66	18	20
11	16	9	15	118	644	2,090	1,490	370	142	66	18	20
12	14	8	100	116	420	2,060	1,440	290	142	66	18	20
13	14	8	546	120	360	2,060	1,440	276	125	66	18	20
14	14	10	310	125	350	2,040	1,460	290	125	66	18	20
15	15	10	200	146	330	2,040	1,400	410	116	66	18	20
16	15	11	206	129	330	2,060	1,420	390	100	57	20	20
17	14	11	185	129	430	2,000	1,360	390	100	57	20	20
18	13	12	164	146	968	1,950	1,310	390	100	57	18	18
19	14	13	138	164	788	1,890	1,310	370	116	57	18	18
20	14	15	192	129	480	1,750	1,280	370	116	57	20	18
21	15	14	200	120	480	1,660	1,400	290	116	57	20	18
22	16	13	171	120	546	1,520	1,750	290	100	48	20	18
23	16	10	146	129	574	1,465	1,480	290	100	48	18	18
24	16	4	138	185	574	1,465	1,220	262	100	48	18	18
25	14	4	138	546	588	1,420	1,000	262	100	48	20	18
26	13	10	129	400	616	1,400	896	234	100	48	20	18
27	13	12	120	320	616	1,389	824	220	108	40	20	18
28	13	13	120	283	842	1,870	770	206	83	36	20	18
29	14	13	112	255	-	2,300	728	220	83	34	20	18
30	14	14	112	241	-	2,090	700	220	91	34	20	18
31	13	-	104	241	-	2,010	-	206	-	38	20	-
Total	448	335	3,686	5,507	12,448	60,654	41,664	11,394	3,826	1,940	660	574
Mean	14.4	11.2	119	178	444	1,956	1,389	368	128	62.6	21.3	19.1
Ac-ft	889	664	7,310	10,920	24,690	120,300	82,640	22,600	7,590	3,850	1,310	1,140

Calendar year 1958: Max 1,440 Min 4 Mean 157 Ac-ft 113,900
Water year 1958-59: Max 3,500 Min 4 Mean 392 Ac-ft 283,900

Note.— No gage-heights Nov. 21-23; Dec. 12; Jan. 10, 11; Mar. 2-10, 17, 18, 29; May 2, 3; July 27, 28; discharge computed on basis of field visits and records for Kash River at Dilaram.

Musa Qala River at Musa Qala, Afghanistan
Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	20	29	38	164	164	164	1,080	969	157	116	59	43
2	20	29	3,000	164	164	150	914	878	157	108	61	38
3	25	34	270	164	164	146	770	824	164	104	59	38
4	25	34	276	164	164	142	658	757	150	100	57	38
5	25	29	255	164	164	142	1,040	714	142	100	52	43
6	25	25	248	164	164	150	968	672	142	96	54	43
7	25	27	227	157	164	164	842	644	138	94	50	46
8	25	29	206	150	164	157	842	602	133	92	48	48
9	25	29	186	150	164	150	806	480	125	91	46	48
10	25	29	178	150	164	146	770	440	120	95	45	48
11	25	27	178	150	164	142	729	400	120	95	43	48
12	25	25	171	150	164	248	686	380	120	100	40	43
13	25	25	164	150	164	1,080	686	350	120	100	36	43
14	25	25	164	150	164	932	878	300	120	87	36	48
15	25	29	164	150	164	860	1,090	290	120	87	36	48
16	25	29	192	150	164	630	1,520	283	116	87	36	50
17	25	29	185	150	164	490	2,380	276	116	78	38	52
18	25	29	178	150	164	490	4,500	269	112	78	46	50
19	25	29	178	150	164	470	3,400	262	112	74	46	52
20	25	29	178	150	164	460	2,800	255	108	74	52	52
21	25	29	178	150	164	450	2,700	241	104	78	50	50
22	25	29	178	150	164	450	2,480	241	100	70	50	50
23	25	29	178	150	164	440	2,540	220	157	70	48	48
24	27	29	178	150	164	420	2,800	206	150	70	48	52
25	29	34	178	150	164	370	1,720	199	146	66	48	52
26	29	36	178	150	*164	420	1,610	178	142	61	50	48
27	29	38	178	150	164	1,520	1,490	171	142	59	50	52
28	29	38	178	150	164	1,220	1,220	164	133	57	46	52
29	29	38	164	150	164	1,150	1,080	157	129	57	48	57
30	29	38	164	157	-	1,090	1,040	150	120	52	43	59
31	29	-	164	164	-	1,080	-	150		54	46	
Total	795	908	8,551	4,762	4,756	15,923	46,039	12,121	3,915	2,550	1,469	1,439
Mean	25.6	30.3	276	154	164	514	1,535	391	130	82.2	47.4	48
Ac-ft	1,577	1,801	16,980	9,445	9,433	31,580	91,320	24,040	7,765	5,058	2,914	2,854

Calendar year 1959: Max 3,500 Min 18 Mean 408 Ac-ft 295,400
Water year 1959-60: Max 4,500 Min 20 Mean 282 Ac-ft 204,800

* Discharge measurement made on this day.
Note.— No gage-heights Dec. 2, 3; Feb. 21-24; July 7-8; discharge estimated.

HELMAND RIVER BASIN

Helmand River near Girishk, Afghanistan

Location.--Lat 31°48', long 64°35', on left bank, under highway bridge about 2.5 kilometers east of Girishk and 51 kilometers upstream from Arghandab River.
Drainage area.--20,300 sq mi (by MKA from Survey of India Maps).
Records available.--July 1946 to March 1949.
Gage.--Water stage recorder. Altitude of gage is 816 meters. Feb. 16 to Apr. 30, 1947 at site about 5 kilometers upstream.
Extremes.--1946-47: Maximum discharge during year, 11,200 cfs (gage height, 28.90 meters) Mar. 22; minimum 336 cfs (gage height 15.85 meters) Aug. 16.
1947-48: Maximum discharge during year, 36,000 cfs (gage height, 18.08 meters) Mar. 8; minimum 750 cfs (gage height, 16.10 meters) Oct. 1.
Remarks.--Records fair, except those for periods of no gage height which are poor. Many diversions for irrigation upstream.

Helmand River near Girishk, Afghanistan
Discharge, in cubic feet per second, water year October 1945 to September 1946

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1										1,900	1,037	1,179
2										1,800	1,026	1,196
3										1,800	*1,015	1,209
4										1,700	1,004	1,221
5										1,700	994	1,234
6										1,600	983	1,246
7										1,600	972	1,259
8										1,600	962	1,272
9										1,500	951	1,284
10										1,500	*940	1,297
11										1,412	945	1,309
12										1,340	951	1,322
13										1,268	956	1,335
14										1,268	962	1,347
15										1,268	967	1,360
16										1,268	973	1,372
17										1,268	978	1,385
18										1,268	984	1,398
19										1,268	989	1,410
20										1,268	994	1,423
21										1,268	1,000	1,435
22										1,268	1,016	1,448
23										1,268	1,033	1,458
24										1,268	1,049	1,469
25										1,233	1,065	1,479
26										1,198	1,081	1,490
27										1,163	1,098	1,500
28										1,128	1,114	1,511
29										1,093	1,130	1,521
30										1,058	1,147	1,532
31										1,047	1,163	
Total										42,588	31,479	40,901
Mean										1,374	1,015	1,363
Ac-ft										84,470	62,440	81,130

* Discharge measurement made on this day.
Note.--Only occasional gage-heights; discharge averaged.

Helmand River near Girishk, Afghanistan
Discharge, in cubic feet per second, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,542	1,996	2,256	2,358	2,670	3,816	8,160	5,130	3,280	1,502	410	392
2	1,553	2,006	2,256	2,500	2,704	3,948	8,080	5,260	3,280	1,460	401	395
3	1,564	2,015	2,256	2,643	2,826	*4,310	8,080	5,520	3,280	1,410	389	398
4	1,574	2,024	2,256	2,704	3,212	4,224	8,000	5,770	3,216	1,360	377	401
5	1,584	2,033	*2,256	2,643	3,936	4,080	8,080	5,770	3,088	1,310	365	404
6	1,595	2,043	2,256	2,643	*3,567	4,014	8,080	5,260	2,960	1,260	353	407
7	1,606	2,052	2,266	2,643	3,354	3,948	8,080	4,870	2,904	1,206	351	410
8	1,624	2,061	2,276	2,460	3,141	3,948	8,000	4,740	2,848	1,152	349	413
9	1,643	2,070	2,286	2,643	3,070	3,948	8,000	4,610	2,792	1,080	346	416
10	1,661	2,080	2,297	2,765	2,948	4,080	7,920	4,610	2,568	1,008	344	419
11	1,680	2,089	*2,307	2,826	2,887	4,150	7,840	5,640	2,512	956	353	423
12	1,698	2,098	2,307	2,826	2,826	4,450	7,760	5,770	2,456	904	362	426
13	1,716	2,108	2,307	2,765	2,826	4,300	7,600	5,390	2,456	852	371	429
14	1,735	2,117	2,307	2,643	2,826	4,300	7,600	4,870	2,456	800	359	433
15	1,753	2,126	2,307	2,521	2,948	4,150	7,600	4,610	2,403	750	347	436
16	1,772	2,135	2,307	2,460	3,120	4,450	*7,600	4,480	2,350	676	*336	440
17	1,790	2,145	2,307	2,460	3,064	4,750	7,600	4,480	2,297	*602	337	454
18	1,808	2,154	2,307	2,409	3,008	4,750	7,600	4,740	2,244	580	339	469
19	1,827	2,163	2,388	2,495	2,784	4,600	7,600	4,870	2,192	560	340	483
20	1,845	2,172	2,459	2,582	2,784	4,750	7,680	4,740	2,142	540	342	498
21	1,864	2,182	2,521	2,582	2,896	5,350	7,760	4,480	2,093	520	344	512
22	1,878	2,191	2,582	2,582	3,420	9,120	7,580	*4,350	2,044	510	349	527
23	1,893	2,200	2,643	2,572	3,618	9,840	7,450	4,220	1,950	500	354	541
24	1,907	2,210	2,765	2,561	3,750	9,480	7,060	4,060	1,856	490	359	556
25	1,921	2,219	2,765	2,550	3,684	8,670	6,810	3,906	1,762	480	364	571
26	1,935	2,228	2,765	2,765	3,618	8,160	6,420	3,832	1,718	472	369	586
27	1,950	2,237	2,562	2,717	3,618	8,000	6,030	3,832	1,674	460	374	619
28	1,959	2,247	2,358	2,670	3,750	7,920	5,900	3,684	1,630	449	380	652
29	1,968	2,256	2,307	2,670		8,080	5,770	3,544	1,586	437	383	685
30	1,978	2,256	2,307	*2,670		8,490	5,390	3,478	1,544	426	386	717
31	1,987		2,332	2,670		8,320		3,412		418	389	
Total	54,810	63,913	73,871	80,998	88,855	176,396	223,130	143,928	71,581	25,130	11,222	14,512
Mean	1,768	2,130	2,383	2,613	3,173	5,690	7,438	4,643	2,386	811	362	484
Ac-ft	108,688	126,739	146,486	160,619	176,199	349,793	442,467	285,409	141,945	49,833	22,253	28,777

Calendar year 1947: Max Min Mean Ac-ft
Water year 1946-47: Max 9,840 Min 336 Mean 2,817 Ac-ft 2,039,210

* Discharge measurement made on this day.
Note.--Only occasional gage-heights for Oct. 1 to Dec. 20 and June 15 to Sept. 30; discharge averaged or estimated on basis of records at Kajakai.

Helmand River near Girishk, Afghanistan
Discharge, in cubic feet per second, water year October 1947 to September 1948

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	750	1,544	1,900	2,192	2,736	3,346	12,000	20,600	5,360	2,512	1,420	840
2	771	1,544	1,948	2,140	2,736	3,280	12,600	18,900	5,120	2,400	1,420	870
3	792	1,544	1,996	2,192	2,848	3,478	13,800	18,000	5,000	2,192	1,460	870
4	813	1,544	2,044	2,296	2,792	4,140	17,600	18,000	4,880	2,140	1,460	870
5	835	1,544	2,140	2,296	2,680	5,990	16,800	18,300	4,770	2,140	1,420	900
6	857	1,544	2,512	2,244	2,624	6,130	15,100	18,000	4,550	2,140	1,380	900
7	878	1,544	2,624	2,296	2,456	13,200	14,400	17,000	4,440	2,092	1,420	900
8	900	1,544	2,512	2,244	2,348	25,800	14,700	16,300	4,330	1,996	1,380	900
9	936	1,586	2,512	2,296	2,348	20,600	18,000	15,600	4,220	1,996	1,340	936
10	972	1,628	2,456	2,348	2,400	14,000	20,000	15,100	4,060	1,996	1,340	936
11	1,008	1,628	2,400	2,348	2,568	12,200	19,400	14,400	3,906	1,948	1,380	972
12	1,044	1,670	2,348	2,348	2,624	10,400	17,600	13,200	3,832	1,948	1,380	972
13	1,068	1,670	2,296	2,244	2,624	9,320	16,500	12,200	3,832	1,948	1,340	1,008
14	1,092	1,670	2,244	2,140	2,624	8,200	16,000	11,600	3,832	1,716	1,300	1,008
15	1,116	1,716	2,192	2,140	2,624	7,750	16,500	11,000	3,758	1,900	1,260	1,008
16	1,170	1,762	2,192	2,192	2,624	*7,300	17,000	10,500	3,758	1,854	1,260	1,044
17	1,224	1,808	2,192	2,192	2,568	7,000	18,900	10,020	3,684	1,854	1,260	1,044
18	1,243	1,854	2,192	2,244	2,624	7,150	22,100	9,490	3,610	1,808	1,260	1,044
19	1,262	1,900	2,140	2,244	2,680	8,820	26,200	8,980	3,544	1,762	1,224	1,044
20	1,281	1,900	2,044	2,192	2,792	10,500	29,400	8,820	3,478	1,808	1,188	1,080
21	1,300	1,900	2,044	2,192	2,904	10,900	28,700	8,500	3,478	1,716	1,152	1,152
22	1,340	1,854	2,044	*2,192	3,024	10,900	25,800	8,200	3,478	1,716	1,116	1,188
23	1,380	1,854	2,092	2,244	*2,960	10,500	22,700	8,050	3,412	1,670	1,080	1,224
24	1,420	1,854	2,192	2,296	2,904	10,400	22,400	7,900	3,413	1,586	1,044	1,260
25	1,460	1,854	2,192	2,400	2,848	10,200	23,400	7,600	3,412	1,762	1,008	1,340
26	1,502	1,854	2,192	2,456	2,904	10,020	24,500	7,150	3,412	1,716	972	1,340
27	*1,502	1,900	2,192	2,568	3,152	10,700	24,800	6,550	3,412	1,380	936	1,260
28	1,502	1,900	2,192	3,412	3,412	10,500	24,800	6,270	3,412	1,340	900	1,300
29	1,544	1,900	2,192	3,544	3,346	10,900	24,500	5,990	3,412	1,300	840	1,260
30	1,544	1,900	2,192	2,960		11,200	22,700	5,730	2,812	1,260	810	1,260
31	1,544		2,192	2,848		10,700		5,600		1,198	840	
Total	36,050	51,914	68,600	73,940	79,774	305,524	598,900	363,450	117,316	56,794	37,590	31,730
Mean	1,163	1,730	2,213	2,385	2,751	9,856	19,963	11,724	3,910	1,832	1,213	1,058
Ac-ft	71,487	102,945	136,034	146,623	158,192	605,854	1187,619	720,721	232,638	112,623	74,541	62,921

Calendar year 1947: Max 9,840 Min 336 Mean 2,719 Ac-ft 1,967,760
Water year 1947-48: Max 29,400 Min 750 Mean 4,983 Ac-ft 3,612,200

* Discharge measurement made on this day.
Note.--No gage-heights Oct. 2-7, 9-10, 13-14, 16, 18-20, 30, Nov. 29, 30; discharge averaged.

Helmand River near Girishk, Afghanistan
Discharge, in cubic feet per second, water year October 1948 to September 1949

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,250	2,060	2,280	2,280		3,760						
2	1,300	2,120	2,280	2,440	2,800	3,760						
3	1,300	2,060	2,280	2,440	16,000	3,900						
4	1,340	2,060	2,360	2,360		4,300						
5	1,340	2,060	2,360	2,280		4,460						
6	1,340	2,060	2,440	2,200	3,500	4,460						
7	1,390	2,060	2,440	2,120		4,620						
8	1,420	2,120	2,360	2,120		6,400						
9	1,500	2,120	2,360	2,120	3,070	28,900						
10	1,500	2,120	2,360	2,200	3,070	32,200						
11	1,420	2,120	2,360	2,280	3,070	20,750						
12	1,700	2,120	2,360	2,360	3,070							
13	1,540	2,120	2,360	2,280	3,170							
14	1,590	2,120	2,360	2,280	3,170							
15	1,590	2,120	2,360	2,360	3,170							
16	1,590	2,200	2,360	2,360	3,070							
17	1,590	2,200	2,360	2,440	3,070							
18	1,590	2,200	2,360	2,440	3,070							
19	1,590	2,200	2,360	2,440	3,070							
20	1,700	2,200	2,440	2,440	3,170							
21	1,750	2,280	2,440	2,520	3,270							
22	1,750	2,280	2,440	2,520	3,640							
23	1,800	2,280	2,360	2,520	6,560							
24	1,800	2,280	2,360	2,520	5,900							
25	1,800	2,280	2,360	2,520	4,920							
26	1,860	2,360	2,360	2,660	4,300							
27	1,750	2,360	2,360	2,660	4,040							
28	1,920	2,360	2,280	2,660	3,760							
29	1,920	2,200	2,280	2,750								
30	1,920	2,200	2,280	2,750								
31	1,920		2,280	2,750								
Total	49,770	65,320	73,000	75,070	112,830							
Mean	1,605	2,144	2,355	2,422	4,029							
Ac-ft	99,000	130,000	145,000	149,000	224,000							

Calendar year 1948: Max 29,400 Min 810 Mean 5,063 Ac-ft 3,675,730

Note.--No gage-heights Feb. 1-8, Mar. 9-11; discharge estimated on basis of records at Kajakai.
Gaging station destroyed by flood Mar. 11, 1949.

HELMAND RIVER BASIN

Helmand River at Lashkar Gah, Afghanistan

Location.--Lat 31° 33' N., long 64° 19' E., 8 kilometers upstream from Arghandab River, 140 kilometers west of Kandahar and 320 kilometers upstream from Chahar Burjak.

Drainage area.--22,300 sq mi, approximately.

Records available.--October 1954 to May 1957.

Gage.--Staff gage on bridge pile with zero at elevation 764.27 meter mean sea level.

Extremes.--Maximum and minimum discharge for the 1954-57 water years are given in the following table:

Water Year	Maximum			Minimum		
	Date	Gage height (meters)	Discharge (cfs)	Date	Gage height (meters)	Discharge (cfs)
1954	Feb. 10, 1954	3.70	29,500	Nov. 14, 1953	1.05	*207
1955	Mar. 15, 1955	4.58	43,600	Dec. 9, 1954	1.055	a185
1956	Apr. 9, 1956	4.54	42,900	Sept. 8-10, 1956	--	a1,600
1957	May 5, 1957	4.78	a49,700	Oct. 29, 1956	0.885	a199

a Mean daily discharge.
* Discharge measurement.

Remarks.--Records fair except those for periods of no gage-heights which are poor.

HELMAND RIVER BASIN

Helmand River at Lashkar Gah, Afghanistan

Discharge, in cubic feet per second, water year October 1953 to September 1954

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3,750	3,600	3,600	1,800	6,000	6,770	12,600	27,400	13,200	2,970	4,360	4,200
2	3,750	3,600	3,600	1,800	6,000	6,870	10,100	27,600	12,600	750	4,400	4,200
3	3,750	3,600	3,600	1,800	6,100	6,820	9,190	27,700	12,300	*596	4,360	4,200
4	3,700	3,600	3,500	1,900	6,200	6,630	8,700	28,000	11,800	978	4,300	4,200
5	3,700	3,600	2,000	2,200	6,600	6,530	8,350	28,400	11,300	2,010	4,300	4,200
6	3,700	3,550	250	*7,460	7,200	6,440	7,930	27,900	11,200	2,890	4,300	4,200
7	3,700	3,550	250	*3,530	9,000	6,390	7,650	27,600	11,000	3,340	4,300	4,200
8	3,700	3,550	500	2,600	15,000	6,250	7,440	27,700	10,800	3,130	4,300	4,200
9	3,700	3,500	3,600	2,300	20,200	6,300	7,300	27,600	10,400	3,130	4,300	*3,320
10	3,700	3,500	3,700	2,000	*18,600	6,440	7,370	27,600	9,960	3,010	4,300	3,250
11	3,700	3,300	3,700	1,700	17,300	6,440	7,110	26,600	9,890	*3,130	4,300	3,250
12	3,700	1,500	3,750	1,500	12,200	6,390	7,110	25,300	9,470	3,090	4,300	3,250
13	3,700	220	3,750	1,450	10,400	6,390	6,920	25,000	9,190	3,010	4,300	3,250
14	3,700	*207	3,750	1,400	10,100	6,340	6,820	24,900	8,770	3,010	4,300	3,200
15	3,650	250	3,750	*1,390	9,750	6,300	6,820	24,500	8,280	3,090	4,300	3,200
16	3,650	1,100	3,750	1,800	9,400	6,250	8,000	22,800	*8,070	3,010	4,300	3,300
17	3,650	3,100	3,750	1,850	8,490	6,250	9,050	21,000	7,720	3,920	4,300	3,300
18	3,650	3,300	3,750	1,850	10,800	6,160	7,650	19,500	7,510	3,260	4,300	3,400
19	3,650	3,350	3,750	1,850	8,840	6,200	8,210	18,800	7,370	3,260	4,300	3,500
20	3,650	3,350	3,750	2,400	8,350	6,300	9,680	18,400	7,110	3,130	4,300	3,500
21	3,600	3,350	3,750	3,700	7,930	6,400	12,600	18,000	6,920	3,260	4,300	3,500
22	3,600	3,400	3,500	3,900	7,720	6,600	*16,400	17,800	6,870	3,260	4,300	3,500
23	3,600	3,400	2,000	4,100	7,580	6,700	*23,600	17,400	6,630	3,260	4,250	3,500
24	3,600	3,400	280	4,400	7,110	6,820	26,000	*18,200	6,630	*3,260	4,250	3,500
25	3,600	3,500	260	4,600	7,010	6,770	28,300	16,800	6,580	3,170	4,250	3,500
26	3,600	3,600	250	4,900	6,970	6,770	*28,400	16,000	6,340	3,170	4,250	3,300
27	3,600	3,600	240	5,200	6,770	6,820	27,900	15,300	6,340	3,420	4,250	3,100
28	3,600	3,600	240	5,500	6,870	6,960	27,500	15,000	6,250	3,700	4,250	3,000
29	3,600	3,600	240	5,900		7,010	27,400	14,800	6,060	4,140	4,250	3,000
30	3,600	3,600	240	6,000		21,800	27,300	14,500	5,880	4,360	4,200	3,000
31	3,600		1,500	*6,130		14,300		14,200		4,360	4,200	
Total	113,450	90,377	74,550	98,910	264,490	225,410	409,400	680,400	262,440	94,074	132,970	106,220
Mean	3,660	3,013	2,405	3,191	9,446	7,271	13,650	21,950	8,748	3,035	4,289	3,541
Ac-ft	225,020	179,260	147,870	196,180	524,610	447,090	812,030	1,349,550	520,540	186,590	263,740	210,680

Water year 1953-54: Max 28,400 Min 207 Mean 6,994 Ac-ft 5,063,160

* Discharge measurement made on this day.

Note.--No gage-heights Oct. 1 to Feb. 8, Mar. 19-23, Apr. 16-24, Aug. 4 to Sept. 30; discharge estimated on basis of records for stations below Kajakai Reservoir and at Chahar Burjak.

HELMAND RIVER BASIN

Helmand River at Lashkar Gah, Afghanistan

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2,700	3,260	3,170	6,440	7,650	5,510	4,500	5,200	7,500	3,400	3,200	3,550
2	2,700	3,170	3,150	6,500	6,970	4,940	4,500	5,200	7,600	3,400	3,250	3,550
3	2,700	3,170	2,780	6,160	6,680	4,660	4,500	5,200	7,600	3,300	3,300	3,550
4	2,700	*3,170	2,380	6,160	6,920	4,570	4,500	5,200	7,500	3,200	3,300	3,550
5	2,700	3,220	1,420	6,200	7,160	4,480	4,500	5,200	7,300	3,150	3,350	3,550
6	2,700	3,170	526	6,400	6,960	4,360	4,500	5,200	7,200	3,100	3,400	3,550
7	2,710	3,220	272	6,600	6,960	4,220	4,500	5,200	7,100	3,050	3,400	3,550
8	2,820	3,220	206	6,800	6,870	4,400	4,500	5,200	7,000	3,000	3,400	3,550
9	2,650	3,260	*185	7,000	6,480	4,220	4,500	5,200	6,800	2,950	3,400	3,550
10	2,600	3,220	2,710	7,200	6,820	3,880	4,500	5,200	6,700	2,900	3,400	3,550
11	*2,650	3,090	5,100	7,200	6,620	3,650	4,500	5,200	6,600	2,900	3,350	3,550
12	2,670	3,090	5,600	7,200	6,410	3,420	4,500	5,200	6,400	2,850	3,300	3,550
13	2,750	3,130	5,700	7,200	6,200	4,580	4,500	5,200	6,100	2,800	3,300	3,550
14	2,820	3,170	5,700	7,200	6,300	5,420	4,500	5,200	6,000	2,800	3,400	3,550
15	2,850	3,090	5,650	7,200	6,300	29,900	4,500	5,200	5,900	2,750	3,400	3,550
16	2,850	3,010	5,840	7,200	6,020	19,800	4,600	5,300	5,800	2,700	*3,380	3,550
17	2,850	3,010	5,790	7,200	6,950	12,700	4,700	5,300	5,700	2,600	3,350	3,500
18	2,890	3,010	5,790	7,300	6,390	10,600	4,900	5,300	5,600	2,500	3,350	3,500
19	2,930	3,010	5,790	7,400	6,200	8,490	5,200	5,300	5,500	2,450	3,400	3,500
20	3,010	3,090	5,790	7,500	6,020	9,190	5,200	5,300	5,400	2,550	3,400	3,500
21	3,010	3,090	5,970	7,600	5,790	9,960	5,200	5,300	5,300	2,900	3,400	3,500
22	3,090	3,090	4,800	7,600	5,740	6,580	5,100	5,300	5,200	3,000	3,400	3,450
23	3,090	3,010	4,800	7,600	5,560	6,300	5,000	5,300	4,700	3,100	3,450	3,400
24	3,090	3,010	4,400	7,600	5,700	6,160	5,000	5,300	4,000	3,200	3,450	3,350
25	3,090	3,010	3,920	7,600	5,700	6,000	*4,990	5,300	3,400	3,200	3,500	3,350
26	3,010	3,010	3,750	7,650	5,740	5,840	5,000	5,400	*3,160	3,100	3,500	3,400
27	3,090	*3,130	3,750	7,650	*5,700	5,740	5,100	6,000	3,300	3,000	3,500	3,450
28	3,090	3,170	3,750	7,650	5,740	5,510	5,100	6,500	3,400	3,000	3,500	3,450
29	3,090	3,170	*5,470	*7,650		5,510	5,100	7,000	3,400	3,050	3,500	3,500
30	3,090	3,170	6,060	7,650		*4,440	5,100	7,300	3,400	3,100	3,500	3,500
31	3,130		6,530	*7,650		4,400		7,400		3,150	3,500	
Total	89,080	93,640	126,729	221,760	177,530	219,430	142,790	170,600	170,560	92,150	105,250	105,150
Mean	2,874	3,121	4,088	7,154	6,340	7,078	4,760	5,503	5,685	2,975	3,395	3,505
Ac-ft	176,700	185,750	251,360	439,850	352,150	435,230	283,220	338,380	338,300	182,780	208,720	208,560

Calendar year 1954: Max 28,400 Min 185 Mean 7,079 Ac-ft 5,124,800
Water year 1954-55: Max 29,900 Min 185 Mean 4,698 Ac-ft 3,400,960

* Discharge measurement made on this day.

Note.--No gage-heights Oct. 1-6, Jan. 5-28, 30, Feb. 4, 11, 12, 19, 25, Mar. 4, 11, 18, 25, Mar. 31 to Sept. 30; discharge averaged or estimated on the basis of records for stations below Kajakai Reservoir and at Chahar Burjak.

HELMAND RIVER BASIN

Helmand River at Lashkar Gah, Afghanistan

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3,500	3,500	3,600	5,240	4,980	5,100	11,500	25,600	11,000	3,580	14,200	5,790
2	3,500	3,500	3,600	5,420	4,980	5,100	10,400	24,700	10,500	3,500	10,700	6,720
3	3,500	3,500	3,600	5,330	4,800	5,060	16,800	23,800	5,420	3,340	7,300	6,820
4	3,500	3,500	3,600	5,060	4,620	5,470	14,000	22,800	5,790	3,260	6,920	6,000
5	3,450	3,500	3,650	5,420	4,710	10,000	15,700	22,600	*6,060	2,850	8,280	4,000
6	3,400	3,500	3,650	4,890	4,710	10,900	22,400	21,800	6,160	2,630	8,070	3,000
7	3,400	3,450	3,700	4,980	4,620	9,120	29,500	21,400	6,340	2,630	7,300	1,610
8	3,400	3,400	3,900	4,980	4,620	7,720	39,700	21,000	6,250	*2,560	7,110	1,600
9	3,400	3,400	4,300	4,800	4,620	7,580	41,700	20,300	6,160	2,560	7,140	1,600
10	3,400	3,400	*4,620	4,890	4,440	6,160	36,900	19,200	6,160	2,560	7,160	1,600
11	3,400	3,400	4,360	4,890	4,360	5,970	35,900	19,100	6,060	2,710	7,180	4,000
12	3,450	3,400	4,360	4,800	4,180	5,600	35,300	19,000	5,700	2,560	7,200	6,400
13	3,500	3,400	7,630	4,800	4,270	5,420	34,800	18,600	5,600	2,380	7,440	6,700
14	3,500	3,400	18,600	4,530	4,100	5,560	33,800	18,000	5,420	2,200	7,860	6,800
15	3,500	3,400	6,480	4,890	4,100	8,980	34,500	17,600	5,240	2,680	7,060	6,900
16	3,500	3,400	5,600	4,890	4,010	5,930	35,400	17,800	5,150	3,170	7,010	7,000
17	3,500	3,400	5,380	4,890	3,830	5,700	35,600	17,300	4,710	4,890	7,010	6,800
18	3,500	3,400	5,200	5,510	3,660	5,510	36,100	16,200	4,710	15,700	6,920	*6,720
19	3,500	3,400	5,150	5,420	4,010	12,300	36,200	16,000	4,710	8,420	6,920	6,700
20	3,500	3,400	5,060	5,240	4,100	21,200	37,200	15,800	4,580	8,840	6,820	6,700
21	3,500	3,400	5,060	5,240	3,920	13,600	36,900	15,500	4,800	8,560	6,720	6,680
22	3,500	3,400	4,980	5,150	3,750	10,800	37,000	14,800	4,530	8,420	6,820	6,960
23	3,500	3,400	4,980	5,100	3,830	9,120	36,700	14,300	4,440	7,200	6,820	6,720
24	3,500	3,400	4,980	5,060	3,750	9,610	34,900	13,600	4,270	7,010	6,840	6,720
25	3,500	3,400	5,060	5,060	3,750	10,800	34,000	13,200	4,180	9,540	6,860	6,530
26	3,500	3,500	5,150	4,980	3,920	8,630	31,200	12,800	4,010	10,900	6,900	6,920
27	3,500	3,550	5,180	4,980	7,930	7,300	30,800	12,500	3,920	10,700	6,920	6,920
28	3,500	3,600	5,200	4,980	6,060	7,110	27,900	12,200	3,790	11,100	6,920	6,900
29	3,500	3,600	4,980	4,980	5,330	6,960	27,100	11,500	3,660	13,400	6,920	6,860
30	3,500	3,600	5,100	4,530		9,260	*25,800	11,400	3,580	15,800	6,720	6,820
31	3,500		5,060	4,980		11,800		11,400		17,000	6,340	
Total	107,800	103,500	161,770	155,910	129,960	259,370	915,700	541,800	162,900	202,650	230,380	171,490
Mean	3,477	3,450	5,218	5,029	4,481	8,367	30,520	17,480	5,430	6,537	7,432	5,716
Acre-ft	213,820	205,290	320,870	309,240	257,770	514,450	1,816,260	1,074,640	323,110	401,950	456,950	340,150

Calendar Year 1955: Max 29,900 Min 3,160 Mean 4,872 Ac-ft 3,527,150
Water year 1955-56: Max 41,700 Min 1,600 Mean 8,588 Ac-ft 6,234,500

* Discharge measurement made on this day.

Note.--No gage-heights Oct. 1 to Dec. 9, Dec. 27, Jan. 1, Feb. 3, Mar. 23, May 2, 11, 25, 30, June 1, 8, 28, July 13, 15, 29, Aug. 9-11, 24-26, Sept. 4-6, 8-17, 19-20, 28, 29; discharge averaged or estimated on the basis of records for stations below Kajakai Reservoir and at Chahar Burjak.

HELMAND RIVER BASIN

Helmand River at Lashkar Gah, Afghanistan

Discharge, in cubic feet per second, water year October 1956 to September 1957

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	7,010	5,600	5,700	8,000	10,500	1,460	16,000	36,000				
2	7,060	5,600	5,700	8,000	10,900	8,840	16,000	38,300				
3	7,110	5,600	5,700	7,720	11,100	9,120	18,000	42,800				
4	7,110	5,600	5,700	8,140	10,400	9,120	26,900	48,700				
5	7,060	5,740	5,700	8,200	10,400	9,120	40,900	49,700				
6	7,110	5,740	5,700	8,200	10,900	9,050	40,400	48,100				
7	7,200	5,740	5,790	8,140	11,200	9,050	40,500	45,200				
8	7,200	5,740	5,850	8,000	11,200	9,120	42,500	43,000				
9	7,440	5,700	5,850	8,000	11,200	9,050	41,700	42,000				
10	7,440	5,970	5,850	8,000	11,100	9,120	41,400	41,000				
11	7,300	5,790	5,850	8,000	10,400	9,050	40,700	41,000				
12	7,300	5,790	5,850	8,000	10,400	9,260	40,200	41,000				
13	4,980	5,790	5,850	16,000	9,960	9,680	40,700	41,000				
14	2,070	5,790	5,850	10,000	9,960	9,820	42,100	40,000				
15	1,900	5,790	5,850	8,630	9,960	9,820	44,100	37,000				
16	1,370	5,790	5,850	8,280	9,960	9,680	45,000	35,000				
17	1,420	5,790	5,850	8,280	9,960	10,200	45,000	34,000				
18	1,370	5,790	5,850	8,690	9,960	49,000	43,700	32,000				
19	1,320	5,790	5,850	9,540	9,960	44,000	42,500	31,000				
20	610	5,790	5,850	9,330	9,960	30,000	42,800	30,000				
21	610	5,790	6,000	9,820	9,960	21,200	42,800	29,000				
22	*498	5,790	6,400	9,780	9,400	19,500	41,200	28,500				
23	459	5,790	6,600	9,750	9,540	17,800	40,900	28,000				
24	448	5,790	6,500	11,100	9,540	17,000	40,400	27,500				
25	426	5,790	6,530	15,200	9,540	16,000	40,000	27,000				
26	338	5,790	6,500	19,400	5,790	17,000	38,000	25,000				
27	316	5,790	6,500	16,000	3,000	18,000	37,000	24,000				
28	272	5,790	6,500	12,600	1,460	20,000	37,000	22,800				
29	199	5,790	7,000	12,300		19,200	36,000	23,000				
30	2,130	5,790	7,600	11,700		17,800	35,000	23,000				
31	5,560		7,800	11,100		16,400		23,000				
Total	112,636	172,830	189,970	315,900	287,610	473,460	1,139,400	1,077,600				
Mean	3,633	5,761	6,128	10,130	9,558	15,270	37,980	34,760				
Ac-ft.	223,410	342,800	376,800	622,610	530,800	939,090	2,259,970	2,137,390				

Calendar year 1956: Max 37,200 Min 199 Mean 8,868 Ac-ft 6,457,550

* Discharge measurement made on this day.

Note.—No gage-heights Nov. 26, Nov. 28 to Dec. 2, Dec. 8-24, 26-31, Jan. 5, 6, 9-11, 18, 22, 25, 27, 30, 31, Feb. 27, Mar. 18-20, 22, 24-27, 30, Apr. 1-3, Apr. 25 to May 1, May 8-27, 29-31; discharge averaged or estimated on basis of records for stations below Kajakai Reservoir and at Darweshan.

HELMAND RIVER AT LASHKAR GAH, AFGHANISTAN

Fragmentary Record

1958

Date	Gage Height (meters)	Discharge (cfs)	Date	Gage height (meters)	Discharge (cfs)
Nov. 20, 1957	0.885	593	*Dec. 30, 1957	1.88	8,700
24	1.62	4,620	Apr. 17, 1958	2.04	10,700
25	1.645	4,940	18	2.10	11,500
26	1.62	4,710	19	2.40	15,800
Dec. 6	1.65	5,330	20	2.50	17,300
7	1.95	8,560	21	2.62	19,100
*24	1.89	7,720	27	2.90	25,300
*26	1.88	7,580			

* Discharge measurement made on this day

1959

Date	Gage Height (meters)	Discharge (cfs)	Date	Gage height (meters)	Discharge (cfs)
Jan. 19, 1959	1.73	3,090	Feb. 19, 1959	1.54	1,780
20	1.475	1,440	Mar. 2	4.33	39,600
21	1.425	1,220	3	2.85	16,600
Feb. 18	1.96	4,180			

Peak at 5 P.M. Mar. 2 4.53 meters about 42,800 cfs

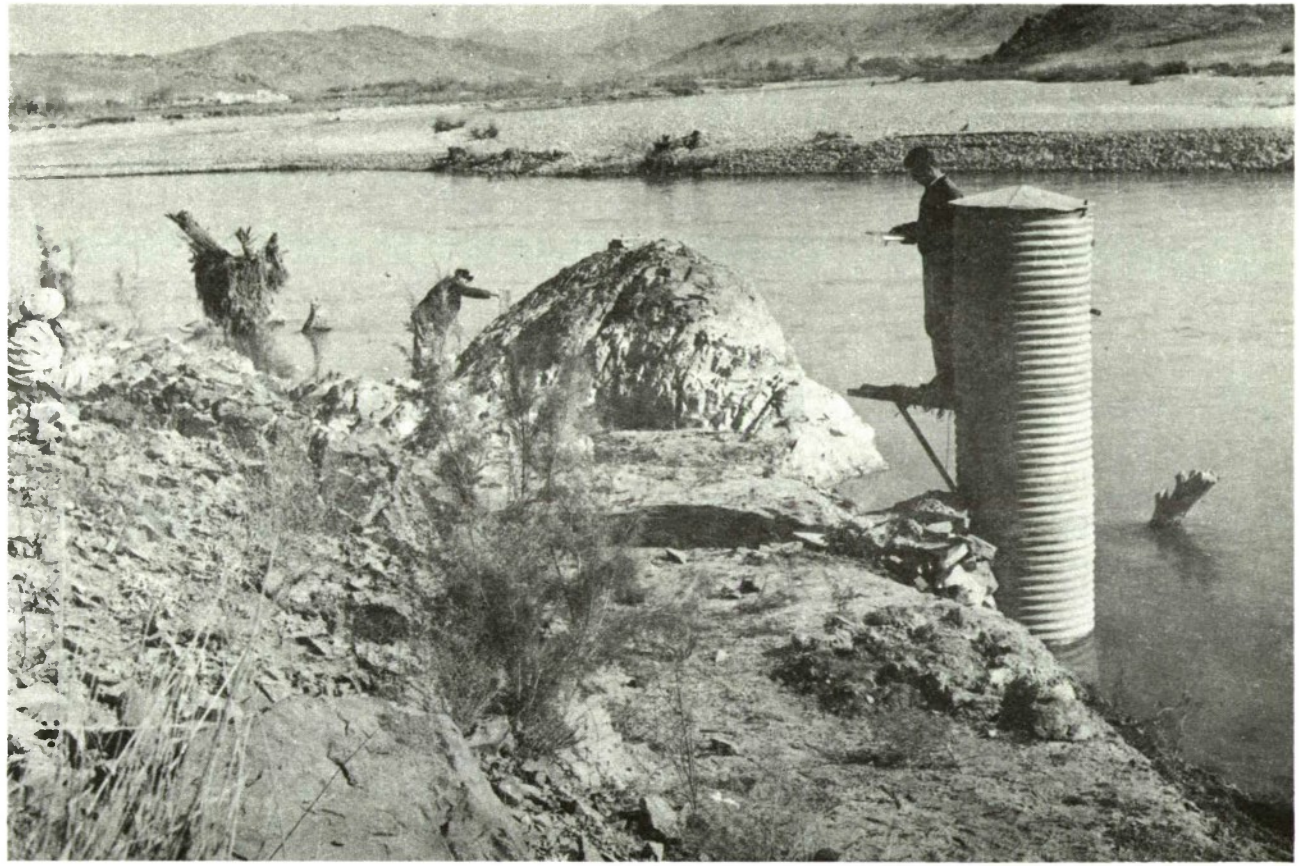


Figure 6.--Arghandab River above Arghandab Reservoir near Kandahar, showing water-stage recorder shelter and well, and staff gage.

HELMAND RIVER BASIN

Arghandab River above Arghandab Reservoir, near Kandahar, Afghanistan

Location.— Lat 32° 01' N., long 66° 10' E., on right bank about 44 kilometers upstream from Arghandab Dam and about 64 kilometers northeast of Kandahar.
Drainage area.— 6,540 sq mi (from Survey of India maps)of which about 640 sq mi is considered non-contributing.
Records available.— March to September 1951 (gage heights only), October 1951 to September 1960.
Gage.— Water-stage recorder. Datum of gage is at mean sea level (from MKA surveys from Survey of India datum). Prior to Jan. 13, 1952, staff gage at same site and datum, Jan. 13, 1952 to Aug. 7, 1958 water stage recorder at site about ½ mile downstream at datum 14 meters lower.
Average discharge.— 9 years, 1,578 cfs (1,142,000 acre-ft year).
Extremes.— Maximum and minimum discharges for the water years 1952-60 are given in the following table:

Water Year	Maximum			Minimum		
	Date	Elevation (meters)	Discharge (cfs)	Date	Elevation (meters)	Discharge (cfs)
1952	Feb. 14, 1952	1115.41	7,170	Sept. 23-26, 1952	—	b232
1953	Feb. 12, 1953	1116.00	12,500	July 29-Aug. 2, 1953	1113.71	71
1954	Mar. 30, 1954	1116.10	14,100	Oct. 1, 2, 1953	1113.80	145
1955	Mar. 15, 1955	1115.76	9,860	Sept. 14, 1955	—	b64
1956	July 28, 1956	1117.23	29,700	Oct. 1, 2, 1955	1114.20	b136
1957	Mar. 17, 1957	1117.54	a35,700	Oct. 1, 1956	1114.20	480
1958	Nov. 19, 1958	—	b9,000	July 25, 1958	—	b205
1959	Mar. 2, 1959	—	b11,900	Aug. 30, 31, 1959	—	b280
1960	Apr. 17, 1960	1119.71	11,400	Sept. 5, 1960	1118.16	b267

a From rating curve extended above 12,000 cfs.
b Mean daily discharge.

A floodmark, elevation 1,118.0 meters (about 42,000 cfs) is believed to be for 1939 flood.

Remarks.— Records good except those prior to December 1951 and October, November, 1954, July to September 1955; and those for periods of no gage height record, which are fair. Many small diversions for irrigation above the station. Water is stored in Arghandab reservoir immediately downstream (capacity at spillway elevation of 1110.0 meters 388,000 acre-ft) for irrigation of about 150,000 acres in Arghandab valley.

Arghandab River above Arghandab Reservoir, Afghanistan
Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	301	415	560	610	860	1,248	4,050	2,980	*940	495	425	361
2	301	425	560	595	810	1,210	3,980	2,720	885	485	415	*361
3	301	435	575	595	835	1,210	3,920	2,915	860	475	407	368
4	308	435	575	575	835	1,324	4,110	3,175	835	475	399	368
5	308	435	575	560	835	2,410	4,540	2,980	785	465	399	375
6	308	445	575	595	810	3,998	4,540	2,850	760	455	391	375
7	308	445	575	630	810	1,845	4,480	2,534	720	*445	*368	383
8	314	445	575	630	810	1,743	4,480	2,348	700	445	368	383
9	314	445	575	610	810	1,641	4,480	2,286	700	435	368	375
10	314	445	575	595	810	1,590	4,480	2,286	680	435	368	368
11	314	445	595	575	810	1,641	4,480	2,224	665	425	368	*354
12	314	455	595	575	810	1,947	4,420	1,998	665	425	361	347
13	314	455	595	595	910	4,540	4,290	1,845	645	415	368	333
14	321	455	595	835	2,596	3,740	4,170	1,692	645	415	361	321
15	327	465	595	700	2,850	3,180	4,170	1,590	630	415	368	308
16	333	475	595	610	1,896	2,980	4,230	1,552	610	415	368	301
17	333	475	595	560	*1,476	*2,596	4,290	1,514	595	415	368	294
18	340	485	595	560	1,400	2,658	4,600	1,476	575	415	368	*288
19	347	485	595	575	1,286	2,658	4,670	1,362	560	415	368	280
20	347	485	595	595	1,286	2,658	4,540	1,362	545	415	368	280
21	354	495	595	630	1,286	2,472	4,170	1,324	530	415	368	267
22	361	505	595	680	1,248	2,534	3,920	1,286	515	435	361	255
23	368	505	595	665	1,210	2,658	3,610	1,248	505	515	361	232
24	375	515	595	*645	1,210	2,658	3,490	1,180	495	545	361	232
25	375	515	595	630	1,210	2,596	3,300	1,150	505	545	361	*232
26	383	515	595	645	1,210	2,870	3,240	1,120	515	530	361	232
27	391	515	595	665	1,210	5,860	3,300	1,090	515	495	368	243
28	391	545	680	680	1,248	5,160	3,490	1,060	515	475	368	243
29	399	545	700	700	1,286	4,360	3,430	1,030	515	465	368	243
30	407	560	665	885	-	4,360	3,180	1,000	505	445	361	243
31	407	-	645	940	-	4,050	-	970	-	435	361	-
Total	10,578	14,265	18,525	19,990	34,664	81,395	122,050	56,147	19,115	14,080	11,573	9,245
Mean	341	476	598	645	1,195	2,625	4,068	1,811	637	454	373	308
Ac-ft	20,980	28,290	36,740	39,650	68,750	161,400	242,100	111,400	37,910	27,930	22,950	18,340

Calendar year 1951: Max - Min - Mean - Ac-ft -
Water year 1951-52: Max 5,860 Min 232 Mean 1,125 Ac-ft 816,400

Peak discharge (base, 8,000 cfs).—No peak above the base.
* Discharge measurement made on this day.
Note.—Discharge computed from once-daily gage reading Oct. 1 to Jan. 23.

Arghandab River above Arghandab Reservoir, Afghanistan
Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	253	395	495	534	478	1,970	1,480	935	*805	202	71	*94
2	253	395	513	534	478	1,890	1,450	*857	857	202	71	a95
3	264	395	495	*513	534	1,830	1,420	831	1,220	191	78	a100
4	*264	410	495	513	688	1,860	1,380	805	1,220	179	86	a100
5	275	*425	495	513	596	1,770	1,350	805	1,060	179	86	a105
6	286	443	495	495	555	2,010	1,350	784	909	179	93	a105
7	299	443	495	495	534	2,330	*1,380	763	784	179	109	a105
8	299	460	495	495	555	2,280	1,380	742	a670	168	145	a110
9	299	460	513	513	626	*2,130	1,420	721	a600	191	168	a110
10	324	460	513	513	4,130	2,010	1,520	700	a540	227	156	a115
11	337	478	513	534	1,190	1,970	1,590	700	a490	252	156	a120
12	350	495	513	534	4,010	1,890	1,810	657	a450	252	162	a120
13	350	495	513	622	4,790	1,770	1,850	657	a420	227	150	a125
14	*350	495	513	555	3,860	1,730	1,850	657	a390	227	140	a130
15	365	495	513	534	2,480	1,730	1,730	636	a360	215	*140	a130
16	365	495	513	534	2,090	1,700	1,590	615	a340	202	140	a132
17	365	495	*534	495	1,930	1,620	1,450	594	a320	191	132	136
18	365	478	534	495	1,830	1,520	1,350	576	a300	179	122	136
19	365	478	534	513	1,660	1,480	1,290	557	a290	168	114	136
20	380	478	534	513	1,560	1,420	1,190	576	a270	156	114	136
21	380	478	513	478	1,480	1,380	1,190	576	a260	136	104	145
22	380	478	513	478	1,450	1,380	1,160	557	a250	136	104	145
23	380	478	513	478	1,420	1,420	1,130	557	a240	127	104	136
24	395	478	513	478	1,420	2,050	1,060	538	a230	118	96	136
25	*380	478	513	478	1,480	1,970	987	557	a225	109	104	136
26	380	495	534	478	1,660	1,850	961	1,090	a220	100	104	145
27	380	*513	534	478	1,810	1,770	961	1,290	a215	86	104	145
28	380	513	513	478	1,970	1,700	935	1,190	a210	78	104	145
29	380	513	513	478	-	1,620	935	1,060	a205	71	a100	145
30	380	513	534	478	-	1,590	883	935	*202	71	a100	145
31	380	-	534	*478	-	1,520	-	857	-	*71	a100	-
Total	10,603	14,105	15,945	15,705	47,164	55,110	40,032	23,375	14,552	5,069	3,557	3,763
Mean	342	470	514	507	1,684	1,778	1,334	754	485	164	115	125
Ac-ft	21,030	27,980	31,630	31,150	93,550	109,300	79,400	46,360	28,860	10,050	7,060	7,460

Calendar year 1952: Max 5,860 Min 232 Mean 1,117 Ac-ft 811,000
Water year 1952-53: Max 4,790 Min 71 Mean 682 Ac-ft 493,800

Peak discharge (base, 8,000 cfs).—Feb. 10 (1:30 a.m.) 11,600 cfs (15.93 m.); Feb. 12 (7:30 p.m.) 12,500 cfs (16.00 m.); Feb. 14 (11 a.m.) 5,800 cfs (15.21 m.).
a No gage-height record; discharge estimated.
* Discharge measurement made on this day.

Arghandab River above Arghandab Reservoir, Afghanistan
Discharge, in cubic feet per second, water year October 1953 to September 1954

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	145	*279	380	446	657	6,730	9,050	6,060	a1,700	883	464	388
2	145	308	380	*428	657	a4,600	7,980	6,000	a1,600	870	464	*373
3	*152	308	*388	446	657	a3,800	7,250	5,860	a1,500	857	464	373
4	156	323	395	628	657	a3,500	6,960	5,670	a1,400	883	464	373
5	162	323	402	2,970	636	a3,300	6,680	5,480	a1,300	870	464	366
6	174	330	402	883	657	*3,250	6,540	5,350	a1,500	883	464	366
7	191	330	402	831	657	3,000	6,400	5,350	a1,450	870	464	358
8	191	330	418	742	657	2,940	6,470	5,100	*1,420	870	464	351
9	202	337	418	628	678	2,940	6,330	5,100	1,380	870	446	330
10	208	344	418	615	4,690	3,240	6,470	4,980	1,350	844	446	351
11	215	337	418	615	4,980	3,240	6,270	4,850	1,320	831	446	373
12	215	351	418	594	4,230	3,180	5,860	4,480	1,290	818	446	366
13	221	358	437	594	6,400	3,120	6,060	4,170	1,250	818	446	366
14	227	358	446	615	5,420	3,120	6,270	a3,800	1,220	805	446	366
15	227	358	455	615	4,230	3,190	6,270	a3,450	*1,160	818	446	351
16	234	366	455	594	3,360	3,360	6,470	a3,250	1,130	818	428	351
17	234	380	446	615	4,910	3,860	6,960	a3,100	1,130	794	428	351
18	234	366	437	615	5,040	4,020	6,610	a2,950	1,100	774	428	344
19	240	380	437	636	4,290	4,540	6,400	a2,900	1,060	763	428	337
20	a245	388	428	615	3,920	5,040	6,270	a2,750	1,040	742	428	337
21	a250	380	428	594	3,550	5,600	6,400	a2,600	1,040	710	428	323
22	a250	380	437	594	3,300	5,800	7,320	a2,500	1,040	689	428	323
23	a260	388	828	594	3,300	5,600	8,280	a2,400	1,060	678	428	323
24	a260	388	557	615	3,240	5,480	7,830	a2,300	1,060	678	428	330
25	a260	395	520	636	3,000	5,480	7,100	a2,200	1,040	657	409	337
26	a260	395	502	636	2,870	5,350	6,680	a2,150	1,040	636	409	337
27	a260	388	464	657	2,630	5,290	6,400	a2,050	987	615	409	351
28	a260	388	455	657	2,630	5,420	6,200	a1,950	961	576	409	351
29	a265	380	446	657	-	6,810	6,130	a1,900	935	*520	409	351
30	a265	380	483	657	-	13,500	6,130	a1,850	*909	483	409	*351
31	a270	-	474	657	-	11,100	-	a1,800	-	483	395	-
Total	6,878	10,731	13,974	21,679	81,903	149,400	202,040	114,350	36,372	23,406	13,535	10,548
Mean	222	358	451	699	2,925	4,819	6,735	3,689	1,212	755	437	352
Ac-ft	13,640	21,280	27,720	43,000	162,500	296,300	400,700	226,800	72,140	46,430	26,850	20,920

Calendar year 1953: Max 4,790 Min 71 Mean 657 Ac-ft 475,800
Water year 1953-54: Max 13,500 Min 145 Mean 1,876 Ac-ft 1,358,000

Peak discharge (base, 8,000 cfs).--Feb. 10 (8 a.m.) 9,960 cfs (15.77 m.); Mar. 1 (7 a.m.) 11,600 cfs (15.93 m.); Mar. 30 (about 12 m.) 14,100 cfs (16.1 m.); Apr. 22 (4:30 p.m.) 9,530 cfs (15.72 m.).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of records of Arghandab Reservoir and the station below dam.

Arghandab River above Arghandab Reservoir, Afghanistan
Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	352	540	638	625	*612	562	1,560	860	599	213	120	80
2	352	550	638	*754	586	550	1,450	846	562	206	120	80
3	373	560	651	716	599	538	1,380	806	550	198	120	80
4	373	580	664	690	638	527	1,360	793	*538	198	120	80
5	404	580	651	690	625	515	1,320	931	550	190	120	80
6	404	580	651	716	612	515	1,260	1,220	562	183	115	78
7	426	580	625	716	612	503	1,200	1,590	573	177	115	78
8	436	580	625	690	612	492	1,150	1,610	573	177	115	78
9	436	600	638	664	612	515	1,120	1,560	550	177	115	78
10	457	600	638	664	599	527	1,090	1,520	527	171	115	78
11	457	610	638	690	599	573	1,080	1,500	503	171	110	*78
12	457	620	638	703	599	677	1,240	1,430	503	165	110	74
13	468	620	638	677	586	903	1,240	1,280	480	159	110	71
14	480	620	651	651	586	3,680	1,180	1,150	468	154	110	64
15	492	620	651	651	573	*8,640	1,120	1,020	457	159	110	68
16	503	640	651	664	573	5,310	1,090	903	436	154	110	71
17	503	640	651	651	573	3,490	1,060	793	415	148	110	71
18	503	640	651	651	573	2,820	1,030	716	394	142	110	74
19	515	640	638	651	562	2,440	1,000	664	394	142	110	78
20	527	640	638	664	562	2,220	945	651	373	136	110	82
21	527	650	638	651	562	2,090	889	651	353	130	100	82
22	527	660	638	651	562	1,960	860	651	333	130	100	87
23	527	660	638	651	562	1,790	860	664	324	130	100	87
24	515	660	638	638	573	1,720	832	974	315	124	100	92
25	527	660	638	638	573	1,650	846	1,300	296	124	100	96
26	527	660	625	612	573	1,540	874	1,480	278	124	95	106
27	538	660	625	612	573	1,470	860	1,340	259	*120	90	110
28	527	660	625	638	*573	1,610	889	1,180	*252	120	90	115
29	527	650	625	664	-	1,920	889	945	252	120	90	*120
30	*527	*638	625	664	-	1,750	*903	846	236	120	90	120
31	530	-	612	638	-	*1,610	-	703	-	120	90	-
Total	14,717	18,598	19,791	20,635	16,444	55,107	32,577	32,577	12,905	4,772	3,320	2,536
Mean	475	620	638	666	587	1,778	1,086	1,050	430	154	107	85
Ac-ft	29,190	36,890	39,250	40,930	32,620	109,300	64,620	64,620	25,600	9,460	6,590	5,030

Calendar year 1954: Max 13,500 Min 323 Mean 1,935 Ac-ft 1,401,000
Water year 1954-55: Max 8,640 Min 64 Mean 657 Ac-ft 464,100

Peak discharge (base, 8,000 cfs).--Mar. 15 (8 a.m.) 9,860 cfs (1,115.76 m.).
* Discharge measurement made on this day.
Note.--No gage-height record Oct. 31 to Nov. 29, July 28 to Sept. 10; discharge estimated.

Arghandab River above Arghandab Reservoir, Afghanistan
Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	136	259	415	*703	677	2,720	8,860	5,300	1,480	970	2,500	592
2	136	259	426	917	690	2,500	10,100	5,080	1,440	950	2,300	592
3	142	*259	426	931	690	2,480	10,400	4,930	1,400	920	2,100	580
4	142	259	426	832	690	3,530	9,800	4,650	1,300	900	*1,660	568
5	148	268	436	767	677	6,120	9,040	4,340	1,270	880	1,460	568
6	154	278	480	716	677	7,180	8,610	4,170	1,240	850	1,300	542
7	159	287	538	716	677	6,280	8,610	4,010	1,220	820	1,220	542
8	171	296	562	716	664	5,380	9,240	3,810	1,200	800	1,180	530
9	177	306	538	716	651	4,860	9,140	3,650	1,190	800	1,140	518
10	183	306	550	703	664	4,510	8,440	3,470	1,180	820	1,100	492
11	198	315	550	703	677	4,400	8,360	3,380	1,180	850	1,050	480
12	206	315	550	716	677	4,340	8,440	3,300	1,180	900	995	480
13	206	324	3,130	716	728	4,270	8,740	3,330	1,160	1,000	955	492
14	213	333	2,420	703	754	4,440	9,040	3,120	1,140	1,500	902	480
15	221	333	1,090	703	767	4,440	9,520	2,950	1,140	3,000	849	480
16	229	342	889	716	703	4,100	10,000	2,850	1,100	3,700	783	480
17	229	352	780	767	690	3,840	10,300	2,690	1,080	8,700	743	480
18	229	352	716	767	690	3,780	10,200	2,430	1,060	10,100	730	480
19	229	362	690	741	703	5,900	10,300	2,360	1,040	8,900	718	470
20	236	362	703	716	703	11,000	10,300	2,240	1,020	4,000	705	470
21	236	373	767	716	703	9,330	*10,400	2,150	995	3,400	692	460
22	236	373	728	690	690	8,660	9,900	2,100	982	3,000	680	470
23	236	384	703	703	716	*7,700	8,660	2,010	982	3,500	668	480
24	244	384	677	716	728	*10,600	8,060	1,940	982	7,400	655	470
25	244	394	664	716	806	8,900	7,380	1,880	978	7,400	655	470
26	244	394	664	690	4,940	7,940	7,060	1,840	973	3,000	642	470
27	244	404	690	703	5,750	7,260	6,540	1,750	*968	3,500	630	470
28	252	415	703	690	3,680	6,740	6,120	1,710	1,000	15,500	618	480
29	252	415	690	677	*2,950	7,300	5,820	1,040	1,050	8,200	*618	480
30	252	*415	690	677	-	8,610	5,600	1,580	1,000	4,400	605	492
31	252	-	703	*664	-	*8,610	-	*1,540	-	3,400	592	-
Total	6,436	10,118	23,994	22,607	34,812	187,720	262,980	92,200	33,930	114,060	31,445	15,058
Mean	208	337	774	729	1,200	6,055	8,766	2,974	1,131	3,679	1,014	502
Ac-ft	12,770	20,070	47,590	44,840	69,050	372,300	521,600	182,900	67,300	226,200	62,370	29,870

Calendar year 1955: Max 8,640 Min 64 Mean 6,066 Ac-ft 439,200
Water year 1955-56: Max 15,500 Min 136 Mean 2,282 Ac-ft 1,657,000

Peak discharge (base, 8,000 cfs).—Feb. 26 (6 p.m.) 9440 cfs (1115.76 m); Mar. 20 (9:30 a.m.) 12,200 cfs (1115.97 m); Mar. 24 (11:30 a.m.) 12,000 cfs (1115.94 m); Mar. 30 (7 p.m.) 9,520 cfs (1115.76 m); Apr. 3 (8 a.m.) 10,900 cfs (1115.89 m); Apr. 22 (3:30 p.m.) 11,600 cfs (1115.95 m); July 28, 29,700 cfs (1117.23 m by Floodmark).

* Discharge measurement made on this day.

Note.— No gage-height record June 25, 26, June 28 to Aug. 3; discharge estimated on basis of reservoir release and change in contents.

Arghandab River above Arghandab Reservoir, Afghanistan
Discharge, in cubic feet per second, water year October 1956 to September 1957

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	492	*1,010	668	730	1,820	*2,240	6,240	8,440	a5,100	1,940	1,160	662
2	505	929	680	718	2,240	2,320	7,420	10,400	4,750	1,850	1,030	662
3	*518	862	680	668	2,080	2,340	7,140	9,900	4,860	*1,900	986	696
4	530	836	655	668	2,030	2,410	15,300	9,710	4,420	1,850	900	730
5	555	823	668	680	2,030	2,410	22,000	8,700	4,310	1,760	900	730
6	555	823	*680	680	*2,620	2,560	21,100	*8,780	4,300	1,720	866	764
7	555	823	680	705	2,500	2,660	20,000	8,440	3,640	1,850	832	730
8	568	810	692	718	2,320	2,850	20,400	8,270	3,970	1,850	866	730
9	580	810	680	705	2,150	3,360	15,800	8,020	3,310	1,680	866	696
10	592	783	680	668	2,100	*3,650	14,500	8,100	3,310	1,500	798	662
11	592	783	668	655	2,100	3,470	12,600	8,600	3,310	1,680	764	662
12	592	770	680	668	2,050	3,330	11,600	8,780	3,260	1,680	764	662
13	592	756	705	756	2,150	3,300	11,300	8,270	3,310	1,590	730	662
14	605	756	692	749	2,080	3,360	11,900	7,780	3,000	1,410	696	662
15	618	743	680	742	2,100	3,530	12,200	7,300	2,900	1,330	696	662
16	630	730	680	692	2,100	3,650	11,000	a7,100	2,110	1,330	696	628
17	630	730	692	655	2,150	12,200	10,800	a7,000	2,500	1,330	696	662
18	642	718	668	668	2,240	21,400	9,800	a7,000	2,600	1,200	696	560
19	655	730	668	692	2,220	10,500	9,760	a6,600	*2,700	1,160	696	560
20	630	730	692	718	2,190	8,860	9,950	a6,500	2,600	1,200	662	560
21	630	718	680	810	a2,100	8,480	9,850	a6,400	2,500	1,200	628	560
22	618	718	680	823	a2,100	7,980	9,760	a6,100	2,400	1,200	628	584
23	630	718	655	862	2,190	7,260	9,090	a6,000	2,400	1,200	628	584
24	630	730	730	902	a2,100	6,700	9,000	a5,700	2,200	1,120	662	628
25	642	705	756	5,480	a2,100	6,540	8,480	a5,600	2,200	1,120	662	628
26	630	705	680	4,070	a2,100	6,320	9,040	a5,500	1,940	1,120	662	628
27	630	692	*655	2,900	2,190	6,320	9,800	a5,100	1,850	1,200	662	628
28	642	743	680	2,410	2,190	7,100	8,400	a5,200	1,940	1,200	662	560
29	655	718	680	2,150	-	6,700	8,060	a5,200	1,940	1,120	662	560
30	680	692	642	*1,960	-	6,540	8,020	a5,300	1,940	1,200	696	584
31	916	-	680	1,860	-	*6,460	-	a5,300	-	*1,200	*696	-
Total	18,939	23,094	21,106	38,162	60,340	176,900	350,310	225,090	91,570	44,690	23,548	19,286
Mean	611	770	681	1,231	2,155	5,706	11,680	7,261	3,052	1,442	760	643
Ac-ft	37,560	45,810	41,860	75,690	119,700	350,900	694,800	446,500	181,600	88,640	46,710	38,250

Calendar year 1956: Max 15,500 Min 460 Mean 2,244 Ac-ft 1,702,000
Water year 1956-57: Max 22,000 Min 492 Mean 2,905 Ac-ft 2,168,000

Peak discharge (base 8,000 cfs).—Mar. 18 (5 a.m.) 34,800 cfs (1117.48 m); Apr. 5 (8 a.m.) 27,700 cfs (1117.04 m); May 3 (11:30 p.m.) 11,500 cfs (116.44 m).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of reservoir release and change in contents.

Arghandab River above Arghandab Reservoir, Afghanistan
Discharge, in cubic feet per second, water year October 1957 to September 1958

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	594	545	1,100	*1,760	3,860	*2,200	4,190	2,350	1,160	594	*375	286
2	*560	635	1,250	1,680	2,800	2,200	3,200	2,700	1,120	560	380	294
3	565	*832	1,460	1,680	2,400	2,200	3,260	2,700	*986	*594	380	286
4	550	832	*1,240	1,680	2,800	2,160	3,420	2,650	866	662	380	286
5	560	798	1,330	1,720	2,650	1,940	3,420	2,600	832	662	380	262
6	615	866	4,000	1,720	2,350	1,980	3,260	2,450	848	594	380	262
7	565	1,030	3,800	1,850	2,030	2,110	3,150	2,450	900	594	*386	262
8	595	1,070	3,100	1,850	2,160	2,200	2,600	2,350	900	594	386	270
9	560	1,030	2,500	1,760	2,030	2,600	3,860	2,250	1,030	594	386	270
10	600	1,030	5,000	2,400	1,720	2,950	4,020	2,300	1,030	594	386	270
11	650	986	3,700	2,250	2,030	2,750	3,530	2,550	986	594	362	262
12	615	1,120	2,500	2,200	1,900	2,600	3,420	2,350	943	696	374	262
13	600	1,160	2,000	2,110	2,030	2,300	3,100	2,250	943	2,940	374	270
14	585	1,070	1,800	1,940	2,030	2,850	2,800	2,110	943	4,180	362	262
15	735	1,070	1,600	2,070	1,760	2,700	2,400	2,110	900	1,890	362	262
16	590	1,160	1,500	2,070	1,590	2,600	2,600	2,160	943	1,380	342	262
17	590	1,070	1,400	2,070	2,070	2,900	2,300	1,980	943	1,020	342	270
18	680	1,070	1,330	2,030	2,200	2,800	2,400	1,800	986	820	350	262
19	590	9,000	1,280	2,160	2,110	2,200	3,000	1,680	986	730	350	270
20	750	4,000	1,160	2,900	2,070	2,160	3,200	1,680	900	420	342	270
21	635	1,600	1,240	2,200	1,980	2,900	3,860	1,680	832	535	326	262
22	635	1,400	1,330	1,850	1,980	2,250	4,800	1,760	832	305	326	262
23	735	1,500	1,160	2,110	2,030	2,500	4,860	2,800	832	320	326	278
24	740	1,700	1,160	2,350	1,940	2,900	4,300	2,400	764	220	326	278
25	791	1,600	1,240	2,350	2,030	2,800	4,080	2,030	696	205	318	286
26	691	1,400	1,370	2,110	2,400	2,950	3,530	1,720	560	230	294	286
27	856	1,300	1,590	2,200	2,400	2,900	2,800	1,460	540	340	286	278
28	756	1,200	1,590	1,900	2,250	3,480	3,800	1,280	560	360	278	286
29	821	1,150	1,680	1,720	-	3,200	3,530	1,160	594	370	278	286
30	726	1,100	1,850	1,940	-	3,050	3,530	1,070	594	375	278	286
31	780		1,980	2,110	-	3,480	-	1,160	-	375	*278	
Total	20,315	44,324	59,240	62,740	61,600	80,810	102,220	63,990	25,949	24,347	10,693	8,188
Mean	655	1,477	1,911	2,024	2,200	2,607	3,407	2,064	865	785	345	273
Ac-ft	40,290	87,920	117,500	124,400	122,200	160,300	202,800	126,900	51,470	48,290	21,210	16,240

Calendar year 1957: Max 22,000 Min 545 Mean 3,161 Ac-ft 2,288,000
Water year 1957-58: Max 9,000 Min 205 Mean 1,546 Ac-ft 1,119,000

Peak discharge (base 8,000 cfs).—Nov. 19 (10 p.m.) 9,100 cfs (1117.76 m); July 13 (5:30 p.m. 8,060 cfs (1118.10 m).
* Discharge measurement made on this day.
Note.— No gage-height record Oct. 3 to Nov. 2, July 14 to Aug. 6; discharge estimated on basis of reservoir outflow and change in contents.

Arghandab River above Arghandab Reservoir, near Arghandab, Afghanistan
Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	318	518	590	750	862	9,710	4,660	3,430	1,300	816	569	290
2	318	518	606	766	910	11,900	6,390	3,420	1,360	816	*540	310
3	326	506	622	878	988	8,140	7,060	3,050	1,180	884	512	*320
4	318	518	622	814	910	6,660	6,030	3,030	1,340	1,060	468	328
5	326	506	*622	686	798	6,050	5,400	3,010	1,180	1,120	450	320
6	342	*506	606	566	846	5,250	5,090	2,840	1,130	*1,090	468	320
7	350	506	622	622	910	5,050	4,750	2,680	1,100	1,020	400	336
8	362	542	638	686	949	5,200	4,920	2,590	1,090	952	370	344
9	374	554	638	702	1,010	6,060	5,300	2,420	1,080	884	350	344
10	386	578	638	702	1,080	8,230	5,420	2,280	1,080	873	340	352
11	410	578	686	702	1,010	6,720	5,610	2,280	1,050	850	330	370
12	398	622	1,140	702	968	6,300	5,400	2,320	1,050	816	325	370
13	398	638	949	702	1,030	5,500	5,070	2,120	1,000	794	320	370
14	410	622	830	718	1,030	5,470	4,900	2,240	1,000	732	320	361
15	422	622	718	734	1,010	5,570	4,920	2,470	977	771	315	361
16	434	622	702	734	1,050	5,690	4,720	2,900	977	1,030	310	379
17	458	606	718	702	1,280	5,370	6,870	3,160	977	1,000	310	379
18	446	622	734	718	1,120	5,860	4,760	3,010	977	952	310	370
19	446	638	718	766	1,100	6,170	4,330	3,470	1,000	918	305	379
20	482	638	750	750	1,180	6,480	4,360	2,900	977	862	300	379
21	470	638	1,030	718	1,180	6,860	4,410	2,500	952	794	300	379
22	470	606	878	734	1,300	6,860	4,860	2,380	929	738	300	388
23	470	638	798	734	1,340	6,880	4,820	2,130	907	696	300	379
24	494	638	766	1,280	1,340	6,680	4,140	1,760	884	1,080	295	388
25	494	638	766	1,180	1,360	6,950	4,080	1,690	862	805	295	370
26	494	622	790	1,010	1,400	6,860	3,740	1,420	839	749	290	405
27	494	606	766	750	1,480	6,260	3,530	1,500	839	687	290	414
28	518	606	750	686	1,620	6,420	3,520	1,500	839	628	285	450
29	530	578	750	766	-	6,510	3,400	1,440	839	589	285	414
30	530	590	750	814	-	6,410	3,280	1,470	839	560	280	388
31	*530	-	718	830	-	6,550	-	1,370	-	540	280	-
Total	13,218	17,620	22,911	23,902	31,061	204,620	145,740	74,880	30,554	26,156	10,812	10,957
Mean	426	587	739	771	1,109	6,601	4,858	2,415	1,018	844	349	365
Ac-ft	26,220	34,950	45,440	47,410	61,610	405,900	289,100	148,500	60,600	51,880	21,450	21,730

Calendar year 1958: Max 4,860 Min 205 Mean 1,354 Ac-ft 980,400
Water year 1958-59: Max 11,900 Min 280 Mean 1,678 Ac-ft 1,215,000

Peak discharge (base 8,000 cfs).—Mar. 2 mean daily 11,900 cfs.
* Discharge measurement made on this day.
Note.--Discharge for Mar. 1 to June 5 for which highwater rating was undefined and for Aug. 7 to Sept. 2 period of no gage-height record, was estimated on basis of reservoir release and change in contents.

Arghandab River above Arghandab Reservoir, Afghanistan
Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	379	459	964	794	771	*862	2,230	5,340	1,930	740	a480	280
2	379	486	1,540	*794	771	850	2,200	5,400	1,880	730	a465	284
3	379	550	1,090	771	760	839	*2,260	5,400	1,790	720	a450	284
4	388	628	1,060	760	749	929	2,500	5,280	1,760	730	a435	272
5	*388	794	*1,040	782	760	1,050	2,640	5,460	1,680	740	a420	267
6	388	895	1,000	782	782	1,020	2,860	5,340	1,660	800	a405	284
7	388	907	977	771	782	964	3,050	4,880	1,560	850	a390	284
8	396	907	952	760	794	940	3,280	4,420	1,580	760	a375	280
9	396	918	940	760	794	952	3,450	4,180	1,500	730	364	280
10	414	918	929	771	805	1,000	3,530	4,130	1,400	710	364	276
11	414	907	918	794	827	1,140	3,650	4,020	1,380	700	354	288
12	423	907	827	850	839	1,200	3,900	3,900	1,330	700	349	288
13	423	907	884	827	850	1,630	4,000	4,180	1,210	730	344	288
14	423	907	884	794	862	1,630	4,400	4,240	1,140	740	338	288
15	*441	895	929	749	918	1,630	4,600	4,180	1,120	730	344	288
16	441	884	1,030	737	964	1,510	6,660	4,130	1,070	700	318	302
17	432	873	952	749	907	1,460	9,900	4,240	1,040	632	302	297
18	432	873	907	760	895	1,660	7,470	4,300	1,000	632	292	292
19	423	862	907	760	873	1,600	6,950	4,300	987	572	308	297
20	423	862	929	760	873	1,600	6,890	4,180	958	572	292	297
21	423	862	929	726	884	1,630	7,120	3,750	958	615	*284	313
22	423	862	918	706	940	1,570	6,660	2,990	944	547	284	318
23	423	850	918	716	918	1,540	6,540	3,140	987	547	280	323
24	423	850	895	726	895	1,540	6,260	*2,860	987	556	267	313
25	423	862	884	726	895	1,600	4,880	2,670	944	556	267	302
26	423	895	873	737	895	1,800	4,590	2,520	900	538	276	308
27	432	1,040	862	726	884	1,830	4,480	2,340	850	556	272	313
28	432	1,050	862	749	884	1,660	4,480	2,220	810	a540	276	308
29	432	988	862	782	884	2,230	*4,540	2,150	760	a525	276	308
30	441	952	839	*782	-	2,180	4,880	2,010	*730	*a510	272	318
31	*450	-	816	749	-	2,230	-	1,960	-	a495	272	-
Total	12,895	25,550	29,317	23,650	24,655	44,276	140,850	120,110	36,845	20,203	10,415	8,840
Mean	416	852	946	763	850	1,428	4,695	3,874	1,228	652	336	295
Ac-ft	25,580	50,680	58,150	46,910	48,900	87,820	279,400	238,200	73,080	40,070	20,660	17,540

Calendar year 1959: Max 11,900 Min 280 Mean 1,716 Ac-ft 1,243,000
Water year 1959-60: Max 9,900 Min 267 Mean 1,360 Ac-ft 987,000

Peak discharge (base 8,000 cfs).--Apr. 17 (2 a.m.) 11,400 cfs (1119.71 m).
* Discharge measurement made on this day.
a No gage-height record; discharge estimated.

Arghandab Reservoir near Kandahar, Afghanistan

Location.--Lat 31°51' N., long 65°54' E., in gate control tower near right end of Arghandab Dam on Arghandab River, about 35 kilometers northeast of Kandahar, about 90 kilometers upstream from Dori River, and about 185 kilometers upstream from Helmand River.

Drainage area.--6,790 sq mi, approximately (from Survey of India maps) of which about 640 sq mi is probably non-contributing.

Records available.--February 1952 to September 1960.

Gage.--Water-stage recorder. Datum of gage is at mean sea level (from Morrison Knudsen Afghanistan surveys based on Survey of India datum). Prior to Aug. 27, 1952, records are from temporary staff gages and by levels at same datum.

Extremes.--Maximum and minimum contents for the water years 1952-60 are given in the following table:

Water year	Maximum			Minimum		
	Date	Elevation Meters	Contents Acre-ft	Date	Elevation Meters	Contents Acre-ft
1952	June 3, 4, 1952	1,105.22	275,000	-	-	-
1953	Apr. 16, 1953	1,105.99	292,800	Sept. 30, 1953	1,094.72	107,000
1954	Mar. 30, 1954	1,110.67	404,100	Jan. 4, 1954	1,0[illegible].40	50,400
1955	Oct. 1, 1954	1,104.42	258,800	Sept. 30, 1955	1,094.[illegible]	108,800
1956	July 28, 1956	1,110.66	403,800	Dec. 6, 1955	1,092.34	81,400
1957	Apr. 5, 1957	1,110.91	409,800	Jan. 24, 1957	1,103.74	244,800
1958	May 5-7, 1958	1,110.18	392,300	Sept. 30, 1958	1,101.14	198,400
1959	Mar. 19, 1959	1,110.35	396,400	Jan. 2, 1959	1,098.55	158,100
1960	May 3-5, 1960	1,110.34	396,200	Nov. 26, 1959	1,096.57	130,200

Remarks.--Reservoir is formed by earth-fill dam; storage began Feb. 24, 1952; dam completed in 1952. Capacity 388,000 acre-ft between elevation 1,066.0 meters, center line of irrigation outlet, and 1110.0 meters, crest of ungated spillway, above mean sea level. Reservoir is for irrigation of up to 150,000 acres in the Arghandab River Valley and for a future power plant for which proposed minimum operating level would be 1088.0 meters.

HELMAND RIVER BASIN

Arghandab Reservoir near Kandahar, Afghanistan

Contents in hundreds of acre-feet on last day of month, of Arghandab Reservoir near Kandahar, Afghanistan

Year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1952					103	1,137	2,402	2,748	2,519	2,226	1,934	1,627
1953	1,795	1,737	1,722	1,528	2,157	2,882	2,849	2,611	2,346	1,915	1,447	1,070
1954	774	598	513	642	2,189	4,012	3,947	3,868	3,698	3,414	3,010	2,588
1955	2,277	2,100	1,936	1,813	1,752	2,500	2,354	2,314	2,064	1,693	1,356	1,088
1956	914	823	1,065	1,266	1,803	4,000	3,966	3,904	3,880	3,942	3,556	3,045
1957	2,791	2,743	2,620	2,816	3,158	3,964	3,978	3,959	3,863	3,498	3,374	3,128
1958	2,944	3,222	3,261	3,075	3,316	3,909	3,909	3,846	3,369	2,948	2,290	1,984
1959	1,084	1,616	1,587	1,690	2,049	3,938	3,911	3,801	3,158	2,857	2,318	1,822
1960	1,430	1,308	1,306	1,340	1,597	2,079	3,952	3,921	3,885	3,626	3,184	2,723

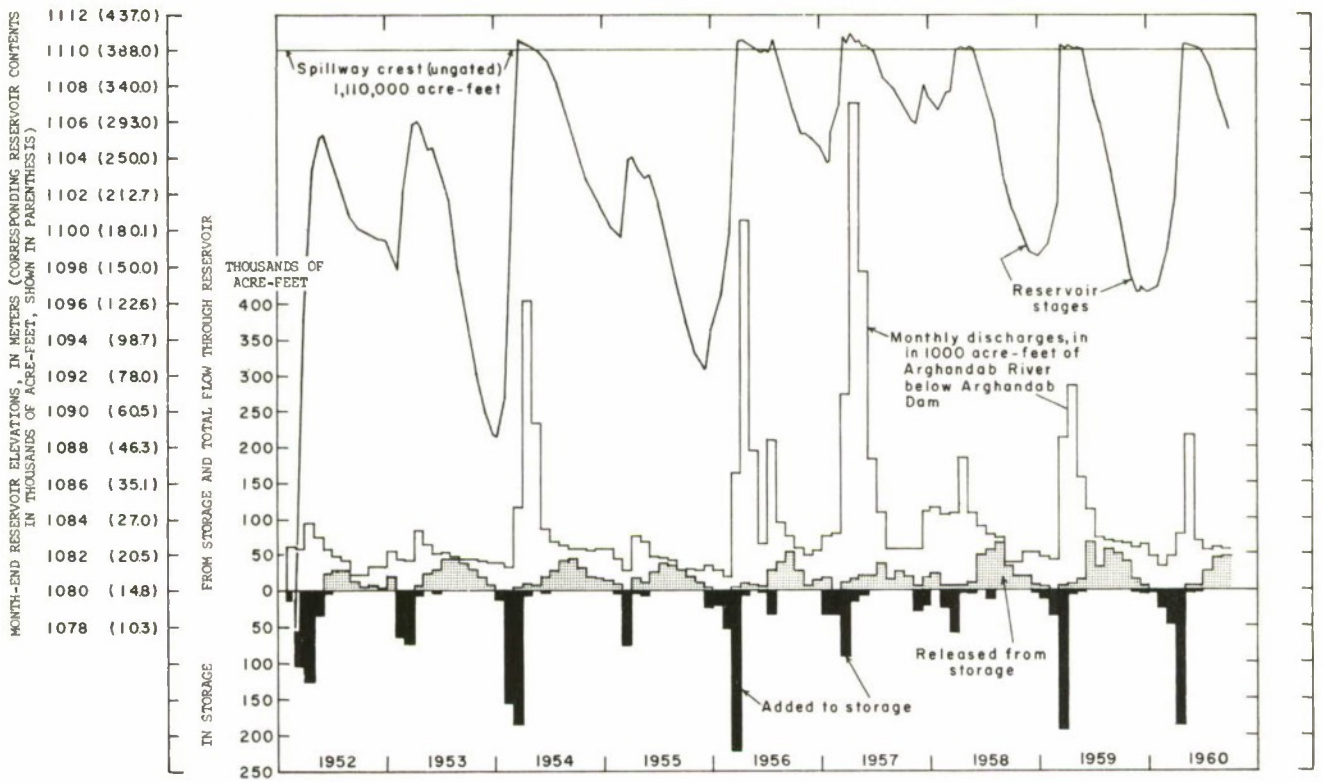


Figure 7.--Operational pattern of Arghandab Reservoir for the calendar year period 1952-60.

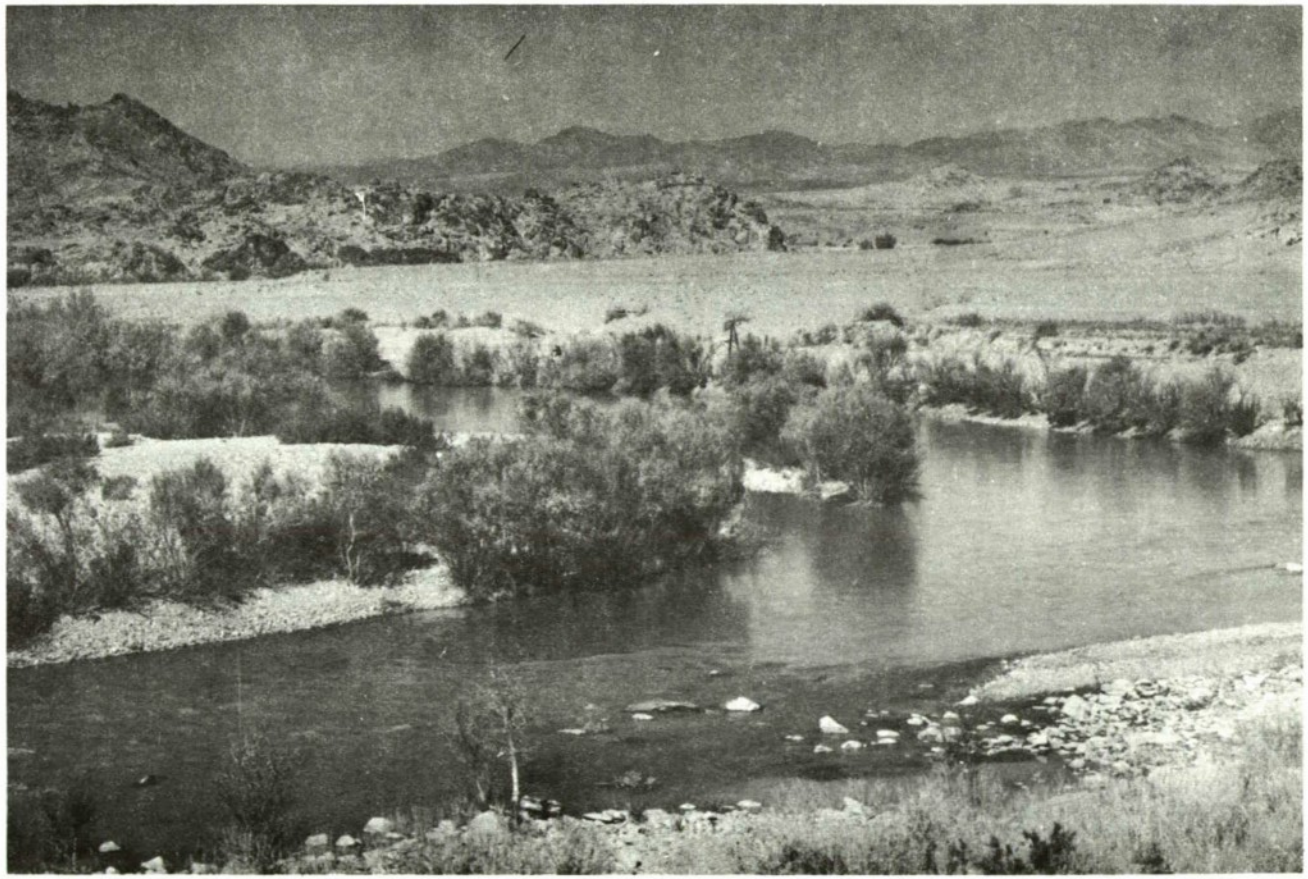


Figure 8.--Arghandab River below Arghandab Dam showing cableway and control.

HELMAND RIVER BASIN

Arghandab River below Arghandab Dam, Afghanistan

Location.--Lat 31° 51' N., Long 65° 51' E., on left bank 5½ kilometers downstream from Arghandab Dam, 55 kilometers northeast of Kandahar, 90 kilometers upstream from Dori Rud, and 180 kilometers upstream from Helmand River.

Drainage area.--6,870 sq mi (from Survey of India maps) of which 640 sq mi is probably non-contributing.

Records available.--October 1947 to September 1960.

Gage.--Water-stage recorder. Datum of gage is at mean sea level (from Morrison-Knudsen Afghanistan surveys based on Survey of India datum). Dec. 30, 1947 to Dec. 22, 1951, water-stage recorder 2½ kilometers upstream at datum 10 meters higher. Dec. 23, 1951 to Oct. 16, 1952, staff gage and concrete control 3 kilometers upstream at datum 10 meters higher.

Average discharge.--13 years, 1446 cfs (adjusted for storage) 1,047,000 acre-ft per year.

Extremes.--Maximum and minimum discharges for the water years 1948-60 are given in the following table:

Water year	Date	Maximum		Minimum Daily	
		Gage Height (meters)	Discharge (cfs)	Date	Discharge (cfs)
1948	Mar. 11, 1948	1042.71	12,700	Sept. 7-8, 1948	44
1949	Mar. 11, 1949	a1043.98	28,000	Sept. 5-9, 1949	158
1950	Jan. 28, 1950	1042.87	14,700	Oct. 1, 2, 1949	243
1951	May 7, 1951	1042.92	15,300	Sept. 30, 1951	283
1952	Feb. 14, 1952	-	b5,100	Aug. 11, 1952	0
1953	Apr. 16, 1953	1055.58	1,570	Oct. 4-6, 1952	280
1954	Mar. 30, 1954	1057.35	13,800	Feb. 28, 1954	405
1955	Apr. 6,7, 1955	1055.92	1,600	Feb. 6, 1955	84
1956	Apr.3,July 28,1956	1057.52	10,100	Feb. 21-23, 1956	242
1957	Apr. 6, 1957	1058.54	22,500	Mar. 11, 1957	152
1958	Apr. 19, 1958	1056.44	3,530	Sept. 19-20, 1958	600
1959	Apr. 3, 1959	1057.02	7,320	Oct. 25, 1958	585
1960	May 4, 1960	1056.73	5,050	Jan. 30 to Feb. 2	422

a From floodmark
b From records of Morrison-Knudsen Afghanistan

Remarks.--Records good except those above 15,000 cfs and those for periods of no gage-height record, which are fair. Flow regulated since February 24, 1952 by Arghandab Dam. No diversions between dam and gage. Regulated reservoir capacity is used to irrigate up to 150,000 acres in tha Arghandab Valley.

HELMAND RIVER BASIN

Arghandab River Below Arghandab Dam, Afghanistan

Discharge, in cubic feet per second, water year October 1947 to September 1948

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	125	191	337	373	428	524	a2,880	2,420	557	389	180	86
2	127	194	337	373	461	524	a2,910	2,270	557	365	172	81
3	129	197	349	373	461	575	a2,940	2,220	539	341	172	76
4	131	*200	349	373	444	650	a2,970	2,080	522	317	172	*62
5	133	206	1,330	361	413	650	a3,000	1,960	522	305	164	51
6	135	212	1,600	373	386	675	2,900	1,860	505	305	164	51
7	137	218	1,030	373	386	4,100	2,800	1,770	489	293	156	44
8	139	224	862	373	413	6,790	3,200	1,640	473	273	156	44
9	141	230	752	373	413	2,900	3,980	1,600	473	263	149	47
10	143	236	675	373	444	3,550	3,700	1,520	458	253	149	59
11	145	242	550	373	444	2,900	3,450	1,480	443	243	149	66
12	147	248	444	373	428	2,420	3,200	1,390	458	243	142	76
13	149	254	399	373	444	2,170	3,050	1,310	522	243	142	81
14	151	260	399	386	444	1,960	2,900	1,240	522	223	135	81
15	153	266	399	386	428	1,840	2,900	1,150	505	a220	135	91
16	155	272	399	386	428	1,720	2,950	1,080	489	a220	128	91
17	157	278	399	386	428	1,680	3,000	*1,020	458	a210	128	97
18	159	284	399	*386	480	2,170	3,250	990	443	a210	121	97
19	161	290	399	386	524	2,420	3,600	933	429	a210	121	103
20	163	296	399	386	550	*2,370	3,550	905	415	a200	121	109
21	165	302	399	386	575	2,470	3,450	825	402	a200	149	109
22	167	308	399	386	550	2,470	3,300	799	377	a200	223	109
23	169	314	399	386	524	2,470	3,200	772	365	a190	253	115
24	171	320	399	386	501	2,510	3,150	747	*353	a190	253	121
25	173	325	399	386	*524	2,470	3,100	700	341	a190	243	135
26	175	325	399	399	575	2,750	3,050	678	329	190	223	156
27	177	325	399	413	600	a3,200	3,000	657	329	*188	205	172
28	179	325	399	625	575	a3,500	2,950	636	329	188	164	188
29	182	337	386	461	550	a3,200	2,800	616	353	180	142	188
30	185	337	386	428	-	a3,000	2,600	596	365	180	121	172
31	188	-	373	428	-	a2,900	-	577	-	180	103	-
Total	4,811	8,016	16,144	12,223	13,821	73,528	93,730	38,441	13,322	7,402	5,035	2,950
Mean	155	267	521	394	477	2,372	3,124	1,240	444	239	162	98
Ac-ft	9,540	15,900	32,020	24,240	27,410	145,800	185,900	76,250	26,420	14,680	9,990	5,860

		Max		Min		Mean		Ac-ft	
Calendar year 1947:									
Water year 1947-48:	Max	6,790	Min	44	Mean	791	Ac-ft	574,000	

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of weather records.
Note.— Water-stage recorder installed Dec. 30; occasional staff gage readings only prior to Dec. 30.

Arghandab River below Arghandab Dam, Afghanistan
Discharge, in cubic feet per second, water year October 1948 to September 1949

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	*164	370	480	550	a580	640	*4,340	3,000	550	a430	196	180
2	156				a1,000	670	4,520	2,800		a420	196	172
3	149				a900	670	4,820	2,600		a410	196	164
4	a150				a700	640	4,940	2,500		a400	196	156
5	a150				a650	620	4,940	2,350		*389	317	156
6	a150				a600	670	4,880	2,200		377	1,680	156
7	a160				a580	670	5,420	2,100		365	1,390	156
8	a160				a580	825	5,180	2,000		353	933	156
9	a160				a580	2,000	5,120	1,900		341	723	156
10	a170				a580	a12,000	5,620	1,800		329	577	*164
11	a170				a580	a15,000	6,440	1,800		317	473	a170
12	a170				a580	a12,000	6,440	1,700		293	389	a170
13	a180				a580	a8,000	5,420	1,600		293	329	a170
14	a180				*577	a7,000	*5,180	1,500		283	*283	a175
15	a180				a580	a6,500	4,940	1,400		273	253	a175
16	a190				a580	a6,000	4,760	1,300		273	233	a175
17	a190				a590	a5,800	4,700	1,200		263	205	a180
18	a200				a590	a5,600	4,700	1,200		263	188	a180
19	a200				a590	a5,400	4,520	1,100		253	172	a180
20	a210				a600	a5,200	4,400	1,100		243	164	a185
21	a220				a600	a6,000	4,220	1,000		233	156	a185
22	a230				a600	a5,500	3,980	*990		223	156	a188
23	a240				a600	a5,000	3,650	950		214	156	a196
24	a250				a610	a4,800	3,600	910		214	156	a196
25	a260				a620	a4,600	3,550	880		205	164	a205
26	*263				a620	a4,500	3,450	860		205	180	a205
27	a270				a630	a4,400	a3,350	830		205	205	a214
28	a270				*636	a4,300	a3,300	810		205	214	a214
29	a280	370			-	a4,300	a3,200	790		196	214	a223
30	a290	*458			-	a4,300	a3,100	774	550	196	205	a233
31	a290	-	480	550	-	a4,300	-	760	-	196	188	-
Total	6,302	11,188	14,880	17,050	17,513	147,905	136,680	46,704	16,500	8,860	11,087	5,435
Mean	203	373	480	550	625	4,770	4,556	1,507	550	286	358	181
Ac-ft	12,500	22,190	29,510	33,820	34,740	293,400	271,100	92,640	32,730	17,570	21,990	10,780

Calendar year 1948: Max 6,790 Min 44 Mean 800 Ac-ft 580,800
Water year 1948–49: Max 15,000 Min 149 Mean 1,206 Ac-ft 873,000

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of discharge measurements and weather records.

Arghandab River below Arghandab Dam, Afghanistan
Discharge, in cubic feet per second, water year October 1949 to September 1950

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	243	429	522	522	2,220	1,311	8,500	5,300	2,120	700	377	317
2	243	429	505	539	2,120	1,311	10,200	5,240	1,955	678	415	317
3	253	429	505	522	2,000	1,311	7,780	5,180	1,861	657	429	317
4	253	429	505	505	1,908	1,311	6,860	5,000	1,815	636	443	317
5	263	429	505	505	1,770	1,348	6,230	5,300	1,726	616	429	317
6	263	429	522	505	1,641	1,348	5,740	5,620	1,680	616	473	317
7	273	429	522	505	1,558	1,437	5,420	5,740	1,726	596	473	317
8	273	429	505	522	1,437	1,477	5,300	5,420	1,683	577	489	317
9	273	429	505	522	1,348	1,512	5,180	5,420	1,641	557	522	317
10	283	415	505	522	1,240	1,860	5,180	6,020	1,599	539	522	317
11	283	402	505	522	1,149	2,120	5,240	6,860	1,558	522	505	317
12	273	402	505	522	1,084	1,908	5,360	7,000	1,477	522	473	317
13	283	415	505	522	1,020	2,080	5,480	6,160	1,386	522	443	317
14	293	415	505	522	961	2,170	5,420	5,680	1,311	522	429	317
15	305	415	505	539	990	2,040	5,480	5,300	1,216	678	429	317
16	305	429	505	539	961	1,955	5,480	5,000	1,149	825	415	317
17	305	429	489	539	961	1,861	5,240	4,820	1,084	851	415	317
18	329	429	489	539	990	1,815	5,000	4,640	990	772	402	317
19	341	429	489	539	990	1,955	5,000	4,520	905	723	389	317
20	341	443	489	539	961	2,320	4,820	4,460	905	678	377	317
21	353	443	489	522	961	2,600	4,640	4,220	878	616	377	317
22	365	443	489	489	933	2,900	4,520	3,980	851	557	365	317
23	365	443	489	522	933	3,250	4,400	3,800	825	522	365	317
24	377	458	489	539	933	3,450	4,280	3,600	799	489	353	317
25	389	458	489	539	961	3,400	4,220	3,400	799	473	353	317
26	389	473	489	557	1,020	3,200	4,280	3,200	772	443	341	317
27	402	489	489	3,150	1,084	3,000	4,400	3,100	772	415	341	317
28	402	505	489	*11,800	1,240	3,000	4,700	2,800	772	402	341	317
29	402	505	489	9,600	-	3,050	5,120	2,650	747	389	329	317
30	415	522	505	6,230	-	3,100	5,300	2,470	723	389	329	317
31	415	-	505	3,600	-	3,100	-	2,220	-	377	317	-
Total	9,953	13,223	15,498	48,039	35,374	68,500	164,770	144,120	37,725	17,859	12,660	9,510
Mean	321	441	500	1,550	1,263	2,210	5,492	4,649	1,258	576	408	317
Ac-ft	19,740	26,230	30,740	95,280	70,160	135,900	326,800	285,900	74,830	35,420	25,110	18,860

Calendar year 1949: Max 15,000 Min 156 Mean 1,223 Ac-ft 885,500
Water year 1949-50: Max 11,800 Min 243 Mean 1,581 Ac-ft 1,145,000

* Discharge measurement made on this day.

Arghandab River below Arghandab Dam, Afghanistan
Discharge, in cubic feet per second, water year October 1950 to September 1951

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	329	458	657	596	596	933	3,980	5,120	2,700	723	317	317
2	353	473	657	596	596	933	4,700	5,240	a2,470	700	317	317
3	365	473	657	596	577	990	4,820	4,880	2,170	700	329	317
4	377	458	657	596	557	1,020	4,220	4,640	2,000	700	329	329
5	377	443	657	596	577	1,051	3,920	5,000	1,770	678	341	317
6	389	473	657	596	596	1,182	3,860	7,040	1,683	657	353	329
7	389	489	678	616	1,410	1,348	4,280	11,100	1,599	636	353	329
8	389	522	678	636	1,560	1,437	4,160	9,650	1,599	636	353	317
9	389	522	678	616	1,275	2,000	3,860	6,720	1,599	636	353	317
10	389	522	678	700	1,116	1,815	3,750	6,090	1,558	636	341	329
11	377	539	678	878	961	1,599	3,800	5,550	1,477	616	341	341
12	389	539	678	772	878	1,517	4,100	5,480	1,437	616	329	341
13	389	539	678	723	825	1,517	4,460	6,020	1,348	616	329	341
14	389	539	657	678	799	1,517	4,640	5,680	1,311	596	317	341
15	389	557	657	678	772	1,558	4,520	5,120	1,275	577	329	329
16	389	557	657	657	772	2,120	4,460	4,700	1,240	577	353	341
17	389	557	657	636	747	2,220	4,580	4,400	1,084	577	365	329
18	389	557	657	616	723	2,040	4,760	4,280	1,084	557	365	329
19	389	577	657	616	772	1,955	4,640	4,160	1,084	539	377	317
20	389	577	657	616	851	1,815	4,520	4,220	1,051	539	365	305
21	389	577	636	596	878	1,683	4,280	4,160	1,020	a539	365	305
22	389	577	636	577	851	1,726	4,280	4,040	1,020	a505	365	293
23	389	577	616	577	851	1,727	4,580	a3,920	990	a473	353	293
24	389	577	616	596	851	2,080	4,460	a3,750	961	a458	341	293
25	377	577	616	596	878	*3,650	4,280	a3,550	905	a429	341	293
26	377	577	616	596	878	6,510	4,280	a3,400	878	a415	329	293
27	377	596	616	596	905	6,650	4,460	a3,250	851	a402	329	305
28	389	596	616	596	905	5,300	4,640	a3,050	799	a377	317	293
29	402	616	616	596	-	4,640	4,880	a2,850	772	a365	317	293
30	429	657	616	596	-	4,220	5,000	a2,700	747	a341	317	283
31	458	-	616	616	-	3,980	-	2,550	-	a329	317	-
Total	11,989	16,298	20,103	19,552	23,957	72,733	131,170	152,310	40,482	17,145	10,547	9,476
Mean	387	543	648	631	856	2,353	4,372	4,913	1,346	553	340	316
Ac-ft	23,780	32,330	39,870	38,870	47,520	144,300	260,200	302,100	80,290	34,010	20,920	18,800

Calendar year 1950: Max 11,800 Min 317 Mean 1,608 Ac-ft 1,164,000
Water year 1950-51: Max 11,100 Min 283 Mean 1,440 Ac-ft 1,043,000

* Discharge measurement made on this day.
a No gage-height record; discharge interpolated.

HELMAND RIVER BASIN

Arghandab River below Arghandab Dam, Afghanistan
Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	293	539	577	650	800	700	1,515	1,725	690	855	750	189
2	317	539	577	650	770	700	830	1,725	765	795	750	189
3	314	522	577	650	750	700	1,570	1,725	930	795	750	304
4	365	505	577	650	770	680	1,570	1,725	960	810	750	*392
5	365	505	577	650	750	680	1,585	1,740	1,050	1,065	750	392
6	377	522	577	640	720	710	1,585	1,740	1,050	765	735	379
7	389	522	577	630	720	765	1,600	1,740	975	810	735	379
8	402	522	577	620	720	815	1,600	1,740	915	810	720	366
9	420	522	577	600	720	830	1,615	1,740	930	810	720	366
10	415	522	596	610	750	830	1,630	1,740	930	780	12	366
11	415	522	596	610	750	830	1,630	1,740	1,030	750	0	366
12	429	522	577	630	780	845	1,645	1,400	1,180	750	379	366
13	415	522	596	670	1,000	870	1,645	1,240	1,225	750	509	366
14	429	522	596	800	5,100	900	1,660	1,240	1,225	735	645	366
15	429	522	596	700	2,500	915	1,675	1,240	1,225	735	1,065	366
16	443	522	616	650	1,700	930	1,675	1,015	1,225	735	1,215	366
17	443	522	616	640	1,500	945	1,675	795	1,150	750	1,050	366
18	443	522	616	640	1,400	945	1,675	795	1,030	750	810	366
19	443	539	616	640	1,300	960	1,690	795	1,030	750	870	366
20	458	539	616	640	1,280	975	1,690	795	1,030	750	870	366
21	473	539	636	630	1,250	975	1,690	795	1,030	750	870	366
22	489	539	*636	620	1,230	975	1,690	795	1,030	750	870	366
23	489	539	630	600	1,200	975	1,710	795	1,030	750	870	366
24	489	539	630	580	800	990	1,710	795	1,030	750	615	366
25	505	557	640	560	2	990	1,710	795	990	750	825	366
26	522	557	650	570	2	990	1,710	795	855	750	810	366
27	522	577	650	600	160	1,310	1,710	750	815	750	457	366
28	522	577	650	650	700	1,480	1,725	690	780	750	280	366
29	522	577	650	730	700	1,495	1,725	690	780	750	244	316
30	522	577	660	880	-	1,510	1,725	690	840	750	220	292
31	539	-	660	840	-	1,510	-	690	-	750	200	-
Total	13,580	16,053	18,922	20,230	30,824	29,725	48,865	37,120	29,725	23,985	20,346	10,505
Mean	438	535	610	653	1,063	959	1,629	1,197	991	774	656	350
Ac-ft	26,940	31,840	37,530	40,130	61,140	58,960	96,920	73,630	58,960	47,570	40,360	20,840

Calendar year 1951: Max 11,100 Min 283 Mean 1,441 Ac-ft 1,043,000
Water year 1951-52: Max 5,100 Min 0 Mean 819 Ac-ft 594,800

* Discharge measurement made on this day.
Note.— Arghandab reservoir closed and storage begun Feb. 24; regulated flow thereafter.

Arghandab River below Arghandab Dam, Afghanistan
Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	a292	*492	554	554	*1,010	447	1,170	1,250	*847	*828	809	772
2	*292	492	554	554	1,010	447	1,380	1,250	847	828	*809	772
3	a292	492	554	554	1,010	447	1,350	*1,250	847	828	809	755
4	a280	492	554	554	990	447	1,360	1,250	847	828	809	755
5	a280	492	554	554	1,000	447	1,360	1,250	847	828	790	720
6	a280	538	554	554	1,000	447	*1,510	1,220	847	828	790	702
7	a292	562	554	554	1,000	447	1,510	1,220	847	828	790	702
8	a292	562	554	554	1,000	447	1,510	1,220	847	828	790	702
9	a292	*562	554	554	1,080	447	1,300	1,220	847	828	790	702
10	a292	639	554	554	1,150	454	1,510	1,220	847	828	790	702
11	a292	554	554	796	1,030	*447	1,510	1,220	847	828	790	*702
12	a292	554	554	*1,010	1,080	447	1,460	1,220	847	818	790	702
13	a292	554	554	1,030	1,080	447	1,510	1,170	847	818	790	702
14	a292	554	554	1,030	1,150	447	1,510	1,150	847	818	790	702
15	a350	554	554	1,030	852	447	1,510	979	847	809	790	702
16	382	554	554	1,030	*432	461	1,570	847	847	809	790	702
17	382	554	554	1,030	432	461	1,510	847	847	809	781	702
18	382	554	*554	1,030	432	461	*1,510	847	847	809	781	702
19	382	554	554	1,030	432	461	1,400	847	828	809	781	702
20	382	554	554	1,030	432	618	1,460	847	847	809	781	702
21	382	554	554	1,030	425	737	1,300	847	847	809	772	702
22	382	554	554	1,030	432	847	1,360	847	828	809	772	702
23	382	554	554	1,030	432	1,030	1,350	847	828	809	772	702
24	382	554	554	1,030	432	1,030	1,350	847	828	809	772	702
25	382	554	554	1,030	432	*1,060	1,350	847	828	809	772	702
26	389	554	554	1,030	432	1,030	1,350	847	828	809	772	685
27	389	554	554	1,020	432	1,030	1,350	847	828	809	772	685
28	389	554	554	1,020	432	1,060	1,320	847	828	809	772	685
29	389	554	554	1,020	-	1,060	1,270	847	828	809	772	685
30	418	554	554	1,020	-	1,030	1,250	847	828	809	772	685
31	492	-	554	1,020	-	1,220	-	847	-	809	772	-
Total	10,688	16,403	17,174	26,866	21,051	20,308	42,160	31,641	25,220	25,315	24,332	21,239
Mean	345	547	554	867	752	655	1,405	1,021	841	817	785	708
Ac-ft	21,200	32,530	34,060	53,290	41,750	40,280	83,620	62,760	50,020	50,210	48,260	42,130

Calendar year 1952: Max 5,100 Min 0 Mean 808 Ac-ft 586,300
Water year 1952-53: Max 1,570 Min 280 Mean 774 Ac-ft 560,110

* Discharge measurement made on this day.
a No gage-height record; discharge computed from gage readings.

HELMAND RIVER BASIN

Arghandab River below Arghandab Dam, Afghanistan
Discharge, in cubic feet per second, water year October 1953 to September 1954

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	*711	676	652	602	554	*476	9,300	6,000	1,870	*1,150	951	1,000
2	702	676	652	*602	546	702	8,400	5,900	*1,870	1,160	951	1,000
3	702	676	652	602	530	737	7,700	5,800	1,840	d1,160	951	1,000
4	702	676	*652	618	523	755	7,300	5,600	1,830	d1,160	951	1,000
5	702	676	652	694	523	755	*7,000	5,500	1,830	d1,160	951	1,000
6	702	676	652	660	523	764	6,800	5,400	1,820	d1,160	951	1,000
7	702	676	652	652	523	764	6,700	5,300	1,820	d1,160	951	1,000
8	702	676	652	652	523	772	6,600	5,200	1,800	d1,160	*1,280	1,000
9	694	668	652	644	523	781	6,500	5,150	1,800	d1,160	988	988
10	694	668	652	635	586	781	6,500	5,080	1,790	1,160	988	988
11	694	668	644	626	586	790	6,500	5,020	1,790	1,160	988	988
12	694	668	644	626	602	790	6,300	4,700	1,790	1,160	988	976
13	694	668	644	626	626	790	6,200	4,360	1,710	1,150	988	976
14	694	668	644	626	635	790	6,300	*3,980	1,120	1,150	988	976
15	694	668	644	626	635	809	6,300	3,620	1,120	1,150	988	964
16	694	668	644	626	626	1,220	6,300	3,400	1,120	1,150	988	964
17	694	668	644	626	652	1,030	6,800	3,250	*1,120	1,150	988	964
18	694	668	635	626	644	1,300	6,600	3,110	*1,400	1,150	988	964
19	694	668	635	626	644	1,400	6,400	3,030	*1,320	1,140	988	951
20	685	668	635	618	644	1,460	6,300	2,820	*1,150	1,140	988	927
21	685	668	635	618	644	1,430	6,300	2,710	1,120	1,140	988	927
22	685	668	635	618	635	1,570	6,900	2,640	1,120	1,140	988	927
23	685	668	635	618	635	1,540	7,500	2,540	1,120	1,120	988	914
24	685	668	626	610	570	1,570	7,600	2,450	*1,000	1,120	988	902
25	685	660	626	610	432	1,520	7,000	2,320	*805	1,110	988	902
26	685	660	626	610	410	1,590	6,600	2,240	1,150	1,050	988	902
27	685	660	626	610	410	2,220	6,400	2,140	1,150	*951	988	780
28	750	660	626	602	403	3,320	6,300	2,070	1,150	951	988	843
29	685	660	626	562	-	6,700	6,300	2,020	1,150	951	988	*939
30	676	660	626	546	-	9,610	6,200	1,960	1,150	951	1,000	939
31	*676	-	618	*546	-	10,600	-	1,900	-	951	*1,000	-
Total	21,526	20,056	19,838	19,163	15,787	59,336	203,900	117,210	42,825	34,525	30,685	28,601
Mean	694	669	640	619	564	1,914	6,797	3,781	1,428	1,114	990	953
Ac-ft	42,700	39,780	39,350	38,010	31,310	117,700	404,400	232,500	84,940	68,480	60,860	56,730

Calendar year 1953: Max 1,570 Min 425 Mean 820 Ac-ft 594,200
Water year 1953-54: Max 10,600 Min 403 Mean 1,681 Ac-ft 1,217,000

* Discharge measurement made on this day.
d Doubtful gage-height record; discharge estimated on basis of recession curve or interpolated.
Note.— No gage-height record Apr. 2 to May 8; discharge estimated by reservoir operation.

Arghandab River below Arghandab Dam, Afghanistan
Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	939	927	*902	*902	902	480	854	1,410	866	744	665	621
2	939	927	902	902	902	418	930	1,400	*866	744	665	528
3	939	927	902	902	902	410	1,050	1,300	866	*744	665	434
4	939	927	902	902	902	410	1,120	1,300	854	744	665	442
5	939	927	902	902	882	410	1,400	1,300	805	744	654	442
6	939	927	902	902	84	401	1,600	1,300	792	710	654	442
7	939	914	902	902	183	401	1,600	1,300	756	688	654	442
8	939	914	902	902	902	401	1,420	1,280	710	688	654	442
9	939	914	902	902	902	401	1,300	1,210	688	688	654	442
10	939	914	902	902	902	401	1,300	1,210	688	676	654	*442
11	939	914	902	902	902	401	1,300	1,210	688	676	654	442
12	939	914	902	902	902	401	1,180	1,210	688	676	654	442
13	939	914	902	902	902	418	1,090	1,210	688	676	654	*452
14	939	914	902	902	902	410	1,080	*1,210	688	676	654	461
15	939	914	902	902	902	410	1,080	*1,120	676	676	621	470
16	939	910	902	902	902	426	1,080	1,050	676	676	621	500
17	939	910	902	902	902	434	1,080	*1,010	676	665	621	*500
18	927	910	902	902	902	442	1,080	976	733	665	621	500
19	927	910	902	902	902	461	1,080	939	780	665	621	500
20	927	910	902	902	902	470	1,280	902	792	665	621	500
21	927	905	902	902	902	490	1,450	866	805	665	621	500
22	927	905	902	902	631	500	1,450	866	805	665	621	500
23	927	905	902	902	519	500	1,450	866	805	665	621	500
24	927	905	902	902	519	500	1,450	890	805	665	621	500
25	927	905	902	902	519	500	1,450	866	805	665	621	500
26	927	902	902	902	519	500	1,450	866	805	665	621	500
27	927	902	902	902	519	500	1,450	866	805	665	621	500
28	927	902	902	902	*519	500	1,440	866	780	*665	621	*500
29	927	*902	902	902	-	528	1,440	866	756	665	621	490
30	*927	902	902	902	-	722	*1,440	866	744	665	621	490
31	927	-	902	*902	-	*756	-	866	-	665	621	-
Total	28,941	27,373	27,962	27,962	21,130	14,402	38,374	33,397	22,891	21,201	19,757	14,424
Mean	934	912	902	902	754	464	1,279	1,077	763	684	637	480
Ac-ft	57,400	54,290	55,460	55,460	41,910	28,560	76,110	66,240	45,400	42,050	39,190	28,610

Calendar year 1954: Max 10,600 Min 403 Mean 1,742 Ac-ft 1,262,000
Water year 1954-55: Max 1,600 Min 84 Mean 816 Ac-ft 590,700

* Discharge measurement made on this day.
Note.— No gage-height record Nov. 9-28, Nov. 30, Jan. 2-30; discharge estimated on basis of reservoir release and discharge measurements.

Arghandab River below Arghandab Dam, Afghanistan
Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	480	442	480	500	288	654	8,630	5,620	1,510	853	3,320	1,260
2	480	*442	480	500	288	665	9,320	5,320	1,450	862	a3,000	1,260
3	480	442	480	500	288	665	10,100	*5,120	1,400	834	a2,600	1,260
4	480	442	480	500	282	676	9,950	4,930	1,320	815	a2,000	1,260
5	480	442	480	500	270	676	9,230	4,660	1,270	786	a1,850	1,260
6	480	442	480	500	270	688	8,710	4,360	1,200	739	a1,850	1,240
7	480	442	480	500	270	699	8,630	4,240	1,160	712	a1,700	1,240
8	480	442	480	500	270	710	8,970	4,060	1,150	720	a1,300	1,240
9	480	452	480	500	270	710	9,050	3,880	1,120	712	a1,300	1,240
10	480	452	480	500	270	722	8,790	3,720	1,100	696	a1,300	1,240
11	480	452	*480	490	265	722	8,300	3,500	1,080	696	a1,300	1,240
12	480	452	480	500	265	733	8,380	3,380	1,070	720	a1,300	1,240
13	480	461	570	500	259	733	8,460	3,320	1,060	739	a1,000	1,200
14	480	461	519	500	259	744	8,710	3,260	1,060	931	a1,150	1,230
15	480	461	510	490	253	744	8,970	3,150	1,040	1,570	a1,300	1,240
16	480	461	510	442	253	744	9,230	3,000	1,010	2,580	a1,300	1,240
17	480	470	500	401	253	744	9,670	2,820	994	6,220	a1,300	1,240
18	480	470	500	401	253	756	9,760	2,660	962	9,100	a1,300	1,240
19	397	470	500	401	253	805	9,860	2,540	920	9,520	a1,300	1,240
20	461	470	500	392	253	768	9,950	2,480	900	4,980	a1,300	1,240
21	461	470	500	392	242	768	10,000	2,360	882	3,320	a1,280	1,240
22	461	470	500	392	242	768	9,760	2,260	872	3,440	a1,280	1,240
23	461	470	500	392	242	1,700	8,880	2,160	853	3,320	a1,280	1,240
24	461	470	490	392	248	7,020	8,220	2,060	834	4,740	a1,280	1,240
25	461	470	490	392	352	8,970	7,740	1,990	872	7,140	a1,280	1,230
26	461	480	490	392	799	8,790	7,360	1,920	872	5,420	a1,270	1,230
27	452	480	490	392	654	*8,050	6,930	1,810	796	*3,080	a1,270	1,230
28	452	480	*490	*392	*632	7,510	6,440	1,760	*815	10,100	*1,260	1,230
29	442	*480	490	392	632	7,440	6,090	1,710	834	9,740	1,260	1,230
30	442	480	490	338	-	8,300	5,800	*1,660	853	5,830	1,260	1,230
31	442	-	500	288	-	8,380	-	1,560	-	4,280	1,260	-
Total	14,494	13,818	15,299	13,671	9,375	81,754	259,630	97,270	31,259	105,195	46,750	37,190
Mean	468	461	494	441	323	2,637	8,654	3,138	1,042	3,393	1,508	1,240
Ac-ft	28,750	27,410	30,350	27,120	18,600	162,200	515,000	192,900	62,000	208,700	92,730	73,770

Calendar year 1955: Max 1,600 Min 84 Mean 705 Ac-ft 510,000
Water year 1955-56: Max 10,100 Min 242 Mean 1,983 Ac-ft 1,440,000

* Discharge measurement made on this day.
a Gage-height record doubtful; discharge computed from Arghandab Reservoir gate release.

Arghandab River below Arghandab Dam, Afghanistan
Discharge, in cubic feet per second, water year October 1956 to September 1957

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	*1,230	*806	800	1,210	1,230	1,790	6,760	8,080	4,950	1,900	*1,280	932
2	1,230	806	800	1,210	1,230	*1,790	7,080	9,570	4,890	1,900	1,280	932
3	1,230	806	800	1,200	1,230	1,790	7,360	11,200	5,470	*1,900	1,020	932
4	1,230	806	800	1,200	1,230	1,790	12,500	10,400	4,900	1,900	802	932
5	1,230	806	800	1,200	1,230	1,790	18,900	*9,930	4,300	1,900	802	932
6	1,120	806	800	1,200	1,230	1,790	22,100	9,030	4,100	1,900	793	932
7	910	806	*796	1,200	1,230	1,790	20,900	8,320	3,900	1,900	793	932
8	910	806	796	1,200	1,230	1,790	19,500	8,000	3,800	1,900	793	932
9	900	806	796	1,200	1,230	1,050	16,000	7,880	3,600	1,900	793	932
10	900	806	796	1,200	1,230	210	14,100	7,920	3,500	1,880	793	932
11	900	806	796	1,200	1,240	*132	12,000	8,240	3,300	1,880	793	932
12	900	806	796	1,210	1,240	520	11,100	8,670	3,200	1,880	793	932
13	900	806	796	1,220	1,240	1,800	11,100	8,320	3,100	1,880	793	921
14	900	806	796	1,210	1,240	1,800	11,300	7,600	2,900	1,870	793	910
15	900	806	796	1,210	1,240	1,800	12,000	7,040	2,800	1,870	793	910
16	900	805	796	1,210	1,240	1,800	11,700	6,840	2,700	1,870	793	910
17	853	805	796	1,210	1,260	2,380	10,500	6,700	2,600	1,860	793	910
18	815	805	796	1,210	1,260	5,680	9,840	*6,660	2,500	1,860	793	910
19	815	805	796	1,200	1,260	11,500	9,660	6,520	2,500	1,850	793	910
20	815	805	796	1,200	1,540	11,200	9,660	5,610	2,400	1,850	793	910
21	815	805	796	1,200	1,790	9,030	9,480	*6,310	2,300	1,840	793	910
22	815	805	796	1,200	1,790	8,850	9,120	6,520	2,200	1,840	862	910
23	815	805	796	1,200	1,790	8,000	8,940	5,960	2,200	1,830	932	910
24	815	805	796	1,210	1,790	7,560	8,850	5,720	2,000	1,820	932	910
25	815	805	796	1,220	1,790	7,280	8,490	5,610	1,900	1,640	932	910
26	815	805	1,020	1,220	1,790	7,160	8,160	5,400	1,900	1,300	932	910
27	815	805	1,210	1,220	1,790	7,080	9,210	5,250	1,900	1,300	932	910
28	815	805	*1,210	1,220	1,790	7,040	8,940	*4,920	1,900	1,300	932	910
29	815	805	1,210	1,220	-	7,040	8,080	4,500	1,900	1,300	*932	910
30	806	805	1,210	1,220	-	*7,040	7,760	4,920	1,900	1,280	932	910
31	806	-	1,210	*1,230	-	6,880	-	4,920	-	1,280	932	-
Total	28,535	24,165	26,994	37,460	39,380	137,152	341,090	222,560	91,510	54,380	27,122	27,575
Mean	920	806	871	1,208	1,410	4,424	11,370	7,179	3,050	1,734	875	919
Ac-ft	56,600	47,930	53,540	74,300	78,110	272,000	676,500	441,400	181,500	107,900	53,800	54,690

Calendar year 1956: Max 10,100 Min 242 Mean 2,081 Ac-ft 1,511,000
Water year 1956-57: Max 22,100 Min 132 Mean 2,898 Ac-ft 2,098,000

* Discharge measurement made on this day.
Note.— No gage-height record Nov. 16 to Dec. 6, June 3 to July 1, July 12-31; discharge computed on basis of reservoir release.

Arghandab River below Arghandab Dam, Afghanistan
Discharge, in cubic feet per second, water year October 1957 to September 1958

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	910	900	1,080	1,880	*1,860	1,900	2,900	2,700	1,490	1,470	1,150	1,180
2	910	890	1,080	1,880	1,860	*1,910	3,260	2,620	*1,490	1,470	1,150	1,170
3	*910	890	*1,070	1,880	1,880	1,910	*3,240	*1,920	1,490	1,470	1,150	1,060
4	910	*852	1,070	1,880	1,880	1,910	3,220	1,690	1,490	1,470	1,170	620
5	910	866	1,270	1,880	1,880	1,910	3,060	1,970	1,490	*1,470	*1,170	620
6	910	910	2,000	1,880	1,880	1,880	2,940	1,970	1,470	1,470	1,180	620
7	910	910	1,970	1,880	1,880	1,900	2,880	1,940	1,480	1,470	1,190	620
8	910	910	1,940	1,880	1,880	1,900	3,020	1,850	1,490	1,470	1,190	620
9	910	910	1,910	1,880	1,880	1,900	3,060	1,740	1,490	1,330	1,190	620
10	910	910	2,000	1,880	1,880	1,900	3,060	1,680	1,490	1,250	1,190	620
11	910	921	1,920	1,880	1,880	1,910	2,960	1,680	1,460	1,240	1,190	620
12	910	921	1,910	1,880	1,880	1,910	2,880	1,740	1,480	1,240	1,180	620
13	900	921	1,910	1,880	1,880	1,910	2,880	1,640	1,490	1,300	1,180	620
14	900	921	1,910	1,880	1,880	1,910	2,800	1,520	1,490	1,400	1,170	610
15	900	921	1,910	1,880	1,880	1,910	2,820	1,530	1,490	1,500	1,160	610
16	900	921	1,910	1,880	1,880	1,800	2,820	1,660	1,490	1,300	1,160	610
17	900	921	1,910	1,880	1,880	1,670	3,060	2,240	1,480	1,200	1,160	610
18	900	921	1,910	1,860	1,840	1,670	3,400	2,090	1,480	1,200	1,150	610
19	900	1,150	1,910	1,860	1,900	1,570	3,380	1,720	1,480	1,200	1,150	600
20	890	964	1,910	1,880	1,900	1,500	3,280	1,580	1,480	1,200	1,150	600
21	890	953	1,910	1,880	1,900	1,500	3,320	1,540	1,480	1,200	1,150	600
22	890	953	1,910	1,880	1,900	1,500	3,380	1,530	1,480	1,200	1,150	600
23	890	953	1,910	1,880	1,900	1,500	3,320	1,520	1,480	1,200	1,150	600
24	900	953	1,900	1,880	1,900	1,500	3,300	1,540	1,480	1,200	1,150	600
25	910	953	1,900	1,880	1,900	1,520	3,280	1,580	1,480	1,200	1,150	590
26	910	953	1,900	1,880	1,900	1,520	3,220	1,600	1,480	1,200	1,150	590
27	910	953	1,900	1,880	1,900	1,520	3,220	1,570	1,470	1,150	1,150	590
28	910	1,080	1,900	1,860	1,900	1,520	3,080	1,530	1,470	1,150	1,150	590
29	910	1,080	1,900	1,860	-	1,520	2,880	1,500	1,470	1,150	1,170	*590
30	910	1,080	1,900	1,860	-	1,540	2,780	1,490	1,470	1,150	1,190	590
31	900	-	*1,900	1,860	-	2,260	-	1,490	-	1,150	1,180	-
Total	28,040	28,341	55,430	58,160	52,760	54,180	92,730	54,370	44,450	40,070	36,120	19,800
Mean	905	945	1,788	1,876	1,884	1,748	3,091	1,754	1,482	1,293	1,166	660
Ac-ft	55,620	56,210	109,900	115,400	104,600	107,500	183,900	107,800	88,170	79,480	71,640	39,270

Calendar year 1957: Max 22,100 Min 132 Mean 2,986 Ac-ft 2,162,000
Water year 1957-58: Max 3,400 Min 590 Mean 1,546 Ac-ft 1,119,000

* Discharge measurement made on this day.
Note.— No gage-height record July 11 to Aug. 3, Sept. 4-30 and doubtful gage-height record June 19 to July 4; discharge computed on basis of reservoir release.

HELMAND RIVER BASIN

Arghandab River below Arghandab Dam, Afghanistan
Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	583	852	812	812	734	974	5,100	3,380	1,980	1,500	*1,010	1,150
2	583	852	812	812	734	822	5,610	3,300	1,980	1,500	1,010	1,150
3	583	852	812	822	734	812	7,080	3,140	1,970	1,500	1,010	1,150
4	*583	852	812	812	734	*822	5,960	*2,900	*1,970	1,500	1,010	1,150
5	583	852	812	812	734	822	5,890	2,920	1,970	*1,500	1,010	1,150
6	583	852	812	774	734	832	5,280	2,860	1,970	1,500	1,010	1,140
7	583	852	812	715	734	832	4,920	2,740	1,960	1,500	1,010	1,140
8	583	852	812	*715	734	832	4,920	2,620	1,960	1,500	1,090	1,140
9	583	852	812	715	734	842	4,980	2,520	1,960	1,490	1,170	1,140
10	583	852	812	715	734	862	5,160	2,430	1,940	1,050	1,170	1,140
11	583	852	812	715	734	862	5,280	2,320	1,940	1,050	1,170	1,140
12	583	852	871	715	734	871	5,340	2,280	1,940	1,040	1,170	1,140
13	583	852	822	715	734	890	5,400	2,220	1,940	1,040	1,170	1,125
14	583	852	822	715	734	890	5,040	2,200	1,940	916	1,160	1,125
15	583	852	822	715	734	890	*4,500	2,260	1,940	1,020	1,160	*1,110
16	583	852	822	715	734	1,090	5,070	2,430	1,940	1,020	1,160	1,110
17	583	852	822	715	744	3,530	4,800	2,740	1,940	1,020	1,160	1,110
18	583	852	822	715	832	5,440	4,700	3,280	1,940	1,020	1,160	1,110
19	583	852	822	724	754	6,000	4,500	3,440	1,920	1,020	1,160	1,100
20	583	852	822	724	754	6,510	4,320	3,350	1,920	1,020	1,160	1,100
21	583	852	822	724	754	6,760	4,300	2,820	1,920	1,020	1,160	1,110
22	583	852	822	724	754	6,760	4,600	2,520	1,920	1,020	1,160	1,110
23	616	832	822	724	754	6,800	4,750	2,290	1,920	1,020	1,160	1,040
24	715	832	822	724	754	6,760	4,300	2,120	1,910	1,020	1,150	1,100
25	706	832	822	724	754	6,730	4,250	2,020	1,910	1,020	1,150	1,100
26	802	832	822	724	754	6,840	3,950	1,980	1,910	1,020	1,150	1,110
27	852	832	822	715	764	*6,700	3,710	1,980	1,660	1,020	1,150	1,110
28	852	822	822	*734	764	6,280	3,500	1,980	1,520	1,020	1,150	1,100
29	852	822	812	734	-	6,060	3,440	1,980	1,520	1,020	1,150	1,100
30	852	*812	812	734	-	5,780	3,440	1,980	1,500	1,020	1,150	1,100
31	*852	-	812	734	-	5,500	-	1,980	-	1,020	1,150	-
Total	19,925	25,360	25,391	22,867	20,880	106,395	144,090	78,980	56,690	35,92 6	34,810	33,600
Mean	643	845	819	738	746	3,432	4,803	2,548	1,890	1,159	1,125	1,120
Ac-ft	39,520	50,300	50,360	45,360	41,420	211,030	285,800	156,650	112,440	71,260	69,050	66,640

Calendar year 1958: Max 3,400 Min 583 Mean 1,434 Ac-ft 1,038,000
Water year 1958-59: Max 7,080 Min 583 Mean 1,657 Ac-ft 1,200,000

* Discharge measurement made on this day.

Arghandab River below Arghandab Dam, Afghanistan
Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,140	*1,000	990	773	422	791	692	4,360	1,910	701	971	952
2	1,140	1,000	1,030	*773	422	*791	692	4,660	1,840	683	971	952
3	1,140	1,000	1,010	773	452	782	638	4,880	1,770	683	971	952
4	1,090	1,000	1,010	773	530	782	560	5,000	1,670	764	971	952
5	1,030	1,000	1,010	773	530	782	560	4,750	1,630	737	971	952
6	1,030	1,000	*1,010	773	530	782	*560	4,410	1,580	728	971	952
7	1,030	990	1,010	773	530	782	545	4,220	1,530	737	962	942
8	1,030	990	1,010	773	530	782	545	3,900	1,450	857	962	942
9	1,030	990	1,010	773	538	782	545	3,720	1,380	857	962	942
10	1,020	990	1,010	773	538	791	552	3,610	1,320	857	962	942
11	1,020	990	1,010	773	538	791	612	3,540	1,230	929	962	942
12	1,020	990	1,010	773	538	800	764	3,610	1,130	980	962	942
13	1,020	990	1,010	773	538	791	848	3,680	1,040	980	962	942
14	1,020	990	1,010	764	545	791	722	3,770	1,020	971	962	933
15	1,020	990	1,010	773	545	800	560	3,820	1,030	971	962	933
16	1,020	990	1,010	773	545	800	870	3,820	980	971	962	933
17	1,020	990	1,010	773	545	800	692	3,790	962	971	962	933
18	1,010	990	1,010	773	545	800	590	3,900	933	971	962	933
19	1,010	990	1,010	773	545	800	582	3,790	895	971	952	933
20	1,010	990	1,010	773	552	800	582	3,610	886	971	952	933
21	1,010	990	1,010	773	605	810	620	3,450	886	971	952	933
22	1,010	990	1,010	773	701	810	582	3,170	866	971	*952	933
23	1,010	990	1,010	773	710	810	575	2,960	886	971	952	933
24	1,010	990	1,010	773	710	810	1,080	2,790	914	971	952	933
25	1,010	990	1,010	773	701	810	*3,340	*2,730	914	962	952	933
26	1,010	990	1,010	773	728	782	4,170	2,580	876	962	952	933
27	1,010	990	1,010	773	800	692	4,240	2,370	942	962	952	933
28	1,010	990	1,010	773	800	692	4,220	2,260	*924	962	952	933
29	1,010	990	1,010	539	800	671	4,170	2,180	819	962	952	933
30	1,000	990	1,010	422	-	683	4,200	3,100	746	*962	952	933
31	1,000	-	887	422	-	692	-	1,990	-	971	952	-
Total	31,940	29,760	31,187	23,018	16,468	24,082	39,908	109,420	34,959	27,912	29,746	28,167
Mean	1,030	992	1,006	743	568	777	1,330	3,530	1,165	900	960	939
Ac-ft	63,350	59,030	61,860	45,660	32,660	47,770	79,160	217,030	69,340	55,360	59,000	55,870

Calendar year 1959: Max 7,080 Min 715 Mean 1,718 Ac-ft 1,244,000
Water year 1959-60: Max 5,000 Min 422 Mean 1,165 Ac-ft 846,100

* Discharge measurement made on this day.

HELMAND RIVER BASIN

Ghazni River near Ghazni, Afghanistan

Location.--Lat 33°45' N., long 68°24' E., 500 meters downstream from Seraj dam and about 24 kilometers upstream from Ghazni.
Drainage area.--495 sq mi, approximately.
Records available.--January to May 1948, March 1949 to April 1952.
Gage.--Water-stage recorder and staff gage read once daily. Jan. 11 to May 10, 1948 at site 14 kilometers downstream at different datum. Altitude of gage is about 2,300 meters from topographic map.
Extremes.--Maximum and minimum discharges for the water years 1948-52 are contained in the following table:

Water Year	Maximum			Minimum		
	Date	Gage Height (meters)	Discharge (cfs)	Date	Gage Height (meters)	Discharge (cfs)
1948	Apr. 2, 3	* 0.30	122	May 10	*-0.11	2
1949	Apr. 10	10.46	200	Many Days	10.05	14
1950	Apr. 28	10.52	242	July 9	10.04	12
1951	May 6	10.75	454	July 10	10.12	29
1952	Apr. 7	10.61	317			

* At different datum.

Remarks.--Records are fair except those for 1948 which are poor. Flow regulated by Seraj dam. Many diversions for irrigation upstream. Records collected by Morrison-Knudsen Afghanistan.

Ghazni River near Ghazni, Afghanistan
Discharge in cubic feet per second, water year October 1947 to September 1948

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1				80		73	115	14				
2				80		*73	122	13				
3				80		73	122	11				
4				80		73	108	10				
5				80		73	101	9				
6				80		78	101	7				
7			69	80		90	96	5				
8				80		95	115	4				
9				80		95	108	3				
10				*96		90	108	2				
11				78		84	95					
12				78		78	90					
13				78		73	84					
14				73		73	84					
15				73	-73	73	84					
16				73		73	84					
17				73		73	78					
18				73		78	78					
19				73		84	90					
20				73		90	90					
21				69		95	73					
22				69		95	65					
23				69		101	57					
24				69		101	47					
25				69		101	44					
26				69		108	36					
27				69		108	28					
28				69		115	18					
29				69		108	14					
30				69		108	14					
31				69		108						
Total				2,320	2,117	2,740	2,348					
Mean				748	73	88.4	78.3					
Ac-ft				4,600	4,200	5,430	4,660					

* Discharge measurement made on this day.
Note.--No gage-heights Jan. 1-9, Jan. 26 to Mar. 1, May 2-8; discharge estimated.

HELMAND RIVER BASIN

Ghazni River near Ghazni, Afghanistan

Discharge, in cubic feet per second, water year October 1948 to September 1949

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1						85	158	20	14	14	20	20
2						85	165	14	14	14	20	20
3						86	172	*16	14	14	26	20
4						*90	186	18	14	14	58	18
5						90	193	20	14	14	44	18
6						90	193	22	14	14	34	18
7						90	193	24	14	14	24	18
8						95	186	*26	14	14	24	16
9						95	193	26	14	14	24	16
10						95	200	24	14	14	22	16
11						95	193	22	14	14	22	16
12						95	186	20	14	14	22	16
13						100	172	18	14	14	20	16
14						100	158	16	14	14	20	16
15						100	134	16	14	14	20	16
16						105	119	16	14	14	18	16
17						105	106	16	14	14	18	16
18						105	95	16	14	14	18	16
19						110	82	14	14	14	18	16
20						110	66	14	14	14	16	16
21						110	39	14	14	14	16	16
22						110	31	14	14	14	*16	16
23					22	*112	29	36	14	14	16	18
24						112	29	34	14	14	18	20
25						119	29	31	14	14	18	20
26						*119	29	26	*14	14	20	16
27						119	29	22	14	14	22	18
28						126	26	18	14	14	20	18
29						134	26	16	14	14	20	18
30						142	26	14	14	14	22	18
31						142	-	14	-	14	20	-
Total						3,271	3,433	617	420	434	696	518
Mean						106	114	20.9	14.0	14.0	22.5	17.3
Ac-ft						6,490	6,810	1,220	830	860	1,380	1,030

* Discharge measurement made on this day.

Note.--No gage-height record Mar. 1-22, May 4-7; discharge estimated on basis of discharge measurements of Mar. 4, 23 and May 3, 8.

HELMAND RIVER BASIN

Ghazni River near Ghazni, Afghanistan

Discharge, in cubic feet per second, water year October 1949 to September 1950

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1.	20	54	74	82	74	82	150	186	50	16	22	18
2	29	58	74	82	70	82	*158	172	54	16	22	18
3	29	62	74	82	70	82	142	119	47	16	23	18
4	29	62	78	82	70	82	126	106	39	16	24	18
5	31	62	78	82	70	82	126	172	34	16	25	18
6	31	66	78	142	70	82	158	200	29	16	26	18
7	31	66	78	95	70	86	165	*186	29	14	35	18
8	31	66	78	90	70	90	179	134	29	14	41	18
9	31	66	78	90	70	90	193	150	24	*12	39	18
10	34	66	78	90	70	90	193	214	26	16	41	18
11	34	66	78	90	70	95	200	200	24	16	36	18
12	*34	66	78	90	70	100	*200	235	22	16	36	18
13	34	66	78	112	70	100	200	193	24	16	29	18
14	36	66	78	90	70	95	207	207	22	16	29	18
15	36	66	78	95	70	95	228	86	22	24	20	18
16	36	*70	82	90	75	95	235	74	20	16	*22	18
17	36	70	82	90	75	95	228	62	*22	16	22	*18
18	39	70	82	82	75	95	228	54	20	16	20	16
19	39	70	82	70	75	90	214	44	22	16	20	16
20	39	70	82	74	75	82	214	44	20	17	20	16
21	39	70	82	74	75	90	207	39	18	16	20	16
22	39	70	82	78	80	100	193	44	16	16	20	16
23	39	70	82	78	*82	100	193	47	16	20	20	16
24	39	70	82	82	82	106	193	47	14	22	20	16
25	41	74	82	82	86	106	200	44	12	22	20	16
26	41	74	82	82	82	134	165	44	14	22	20	16
27	44	74	82	82	82	150	165	47	14	22	20	16
28	47	74	*82	82	82	119	242	41	16	22	20	16
29	47	74	82	74	-	106	172	39	12	22	18	16
30	50	74	82	70		106	179	47	12	24	18	16
31	50		82	74		*119		54		24	18	
Total	1,135	2,032	2,470	2,658	2,080	3,026	5,653	3,331	723	553	766	514
Mean	36.6	67.7	79.7	85.7	74.3	97.6	188	107	24.1	17.8	24.7	17.1
Ac-ft	2,250	4,030	4,900	5,270	4,130	6,000	11,200	6,610	1,430	1,100	1,520	1,020

Calendar year 1949: Max Min Mean Ac-ft

Water year 1949-50: Max 242 Min 12 Mean 68.3 Ac-ft 49,460

* Discharge measurement made on this day.

Note.--No gage-height record Feb. 5-22; discharge estimated.

Ghazni River near Ghazni, Afghanistan
Discharge in cubic feet per second, water year October 1950 to September 1951

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	44	50					120	378	70	35	44	44
2	44	50					120	352	70	35	44	44
3	44	54					125	308	66	35	41	47
4	44	58					130	235	62	34	41	47
5	47	58					140	378	62	34	41	47
6	47	58					150	442	58	34	41	44
7	47	62					160	400	58	31	41	47
8	47	62					170	352	54	31	41	47
9	47	62					190	282	50	31	44	47
10	47	62				88	210	258	44	31	44	44
11	47	62					220	242	44	31	70	44
12	47	62					230	335	44	34	66	47
13	47	62					250	290	44	34	58	47
14	47	62	80	90	71		270	266	44	34	50	44
15	50	62					280	235	41	36	50	44
16	50	62					300	207	40	34	50	41
17	50	62					320	165	40	34	44	39
18	*50	66					330	119	40	34	44	36
19	50	70				*95	340	119	39	34	44	36
20	50	74				95	340	106	39	34	39	39
21	50	74				95	344	90	39	34	39	41
22	50	74				95	326	86	38	39	41	41
23	50	74				95	299	82	38	36	41	44
24	50	74				106	282	82	38	39	41	47
25	50	74				106	258	82	37	39	39	47
26	50	78				112	258	86	37	39	39	47
27	50	78				119	274	90	37	41	41	47
28	50	78				112	308	90	36	41	41	50
29	50	78				112	400	86	36	44	41	50
30	50	78				112	410	82	36	41	41	47
31	50					112		78		44	44	
Total	1,496	1,980	2,480	2,790	1,980	2,950	7,554	6,403	1,381	1,107	1,385	1,336
Mean	48.3	66	80	90	71	95.2	252	207	46	35.7	44.7	44.5
Ac-ft	2,970	3,930	4,920	5,530	3,930	5,850	14,980	12,700	2,740	2,200	2,750	2,650

Calendar year 1950: Max 242 Min 12 Mean 69.2 Ac-ft 50,100
Water year 1950-51: Max 442 Min 31 Mean 90.0 Ac-ft 65,140

* Discharge measurement made on this day.
Note.--No gage-height record Dec. 1 to Mar. 18, April 1-20, June 16 to July 4; discharge estimated.

HELMAND RIVER BASIN

Ghazni River near Ghazni, Afghanistan

Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	47	86	112	119	126	119	274					
2	50	78	112	134	119	126	274					
3	54	82	119	119	119	126	266					
4	58	82	119	119	119	126	282					
5	54	86	119	126	119	126	299					
6	62	90	119	134	119	126	308					
7	66	90	119	119	119	134	308					
8	70	95	119	119	119	134	308					
9	70	95	119	119	119	134	299					
10	70	95	119	119	119	134	299					
11	74	100	119	126	119	134	299					
12	74	100	119	134	126	150	282					
13	78	100	119	126	134	158	266					
14	78	100	119	119	134	150	266					
15	74	100	119	119	126	142	260					
16	74	106	119	119	119	142	260					
17	74	142	119	119	112	150	250					
18	70	100	119	119	119	150	240					
19	70	106	119	119	134	165	230					
20	62	106	119	134	119	179	220					
21	70	100	119	119	119	193	210					
22	62	100	119	119	119	179	200					
23	62	106	119	119	119	179	190					
24	70	150	119	119	119	193	180					
25	66	126	119	119	119	200	170					
26	66	106	134	126	126	207	160					
27	66	100	119	142	126	228	150					
28	66	100	119	126	119	266	140					
29	70	100	119	126	119	282	130					
30	74	106	119	142		266	120					
31	78	-	119	126		282	-					
Total	2,079	3,033	3,690	3,844	3,524	5,280	7,140					
Mean	67	101	119	124	122	170	238					
Ac-ft	4,120	6,020	7,320	7,620	6,990	10,470	14,160					

Calendar year 1951: Max 442 Min 31 Mean 97.8 Ac-ft 70,790
Water year 1951-52: Max Min Mean Ac-ft

* Discharge measurement made on this day.
Note.--No gage-heights Apr. 15-30; discharge estimated.

HELMAND RIVER BASIN

Paltu River near Gardez, Afghanistan

Location.--Lat 33°08'N, long 69°05'E, on right bank of Paltu River, one kilometer downstream from the Paltu dam-site, about 19 kilometers east of Sarafsar, 51 kilometers south of Gardez, and 72 kilometers southeast of Ghazni.
Drainage area.--130 sq mi, approximately.
Records available.--May 1949 to March 1952.
Gage.--Water-stage recorder. Altitude, of gage, about 2,100 meters.
Extremes.--1949-50: Maximum discharge during year, 540 cfs Apr. 3 (gage-height 2.19 meters); minimum, 1 cfs Sept. 13-30. 1950-51: Maximum discharge during year, 780 cfs Aug. 11 (gage-height, 2.24 meters); minimum, 2 cfs Oct. 1-18.
Remarks.--Records are fair except those for periods of no gage-height record, which are poor. Records collected by Morrison-Knudsen Afghanistan, Inc.

Paltu River near Gardez, Afghanistan

Discharge, in cubic feet per second, water year October 1948 to September 1949

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1									18	6	3	2
2									18	6	3	2
3								31	18	6	4	2
4									15	5	4	2
5								*34	15	5	10	2
6								34	15	5	8	2
7								34	15	5	7	2
8								34	15	5	5	2
9								30	15	6	3	2
10								30	15	6	3	2
11								30	15	6	2	2
12								30	15	6	2	2
13								30	15	6	2	2
14								30	12	6	2	2
15								26	12	7	2	2
16								26	10	22	2	2
17							*	26	8	8	2	2
18								22	10	8	2	2
19								22	12	7	2	2
20								22	12	7	2	2
21								22	10	6	*2	2
22								22	10	6	2	2
23								38	10	5	2	2
24								30	10	5	2	2
25								26	8	*20	2	2
26								26	8	10	2	2
27								22	7	18	2	*2
28								22	*8	8	2	2
29								18	8	6	3	2
30								15	7	5	2	2
31								15		4	2	
Total								840	366	231	93	60
Mean								27.1	12.2	7.5	3.0	2.0
Ac-ft								1,670	726	458	184	119

* Discharge measurement made on this day.

Note.--No gage-height record May 1-4; discharge estimated.

Paltu River near Gardez, Afghanistan

Discharge, in cubic feet per second, water year October 1949 to September 1950

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1.	2	3	3	2			245	176	43	9	15	3
2	2	3	3	2			292	176	39	9	13	3
3	2	3	3	2		26	344	176	39	9	17	2
4	2	3	3	2			374	176	35	9	6	2
5	2	3	3	2	2		344	199	32	9	5	2
6	2	4	3	2			*344	199	32	9	5	2
7	2	4	4	2			344	176	29	7	6	2
8	2	3	4	2		31	318	153	26	7	6	2
9	2	3	4	2			292	268	26	7	5	2
10	2	4	4	2			268	222	23	*7	5	2
11	2	4	4	2			268	*175	23	11	4	2
12	2	4	4	2		*34	*268	175	*20	5	4	2
13	*2	3	4	2		42	245	152	20	15	3	1
14	2	3	3	2		42	222	152	13	9	3	1
15	2	4	3	3	4	42	245	132	13	9	4	1
16	3	4	4	3		42	222	115	13	13	3	1
17	3	3	4	2		42	199	115	13	7	*3	1
18	3	*3	3	3		42	199	101	13	5	2	*1
19	3	3	3	3		46	199	90	11	4	2	1
20	3	3	3	2		51	199	90	11	4	2	1
21	3	3	3	2		56	176	80	11	4	2	1
22	3	3	3	2		51	176	72	11	4	2	1
23	3	3	3	2		51	153	72	11	4	2	1
24	3	3	3	3		51	131	66	11	4	2	1
25	3	4	3	3	8	46	176	66	9	3	2	1
26	3	5	4	3		46	176	61	9	3	2	1
27	3	4	*3	3		*46	222	56	9	3	2	1
28	3	4	3	3		51	199	51	7	3	2	1
29	3	4	3	3	-	51	222	51	7	4	2	1
30	3	3	3	2		51	199	47	7	4	5	1
31	3		3	2		61		47		5	4	
Total	78	103	103	72	124	1,260	7,236	3,887	566	205	140	44
Mean	2.5	3.4	3.4	2.3	4.43	40.6	241	125	19	6.6	4.5	1.5
Ac-ft	155	204	204	143	246	2,500	14,350	7,710	1,120	407	278	87

Calendar year 1949: Max Min Mean Ac-ft

Water year 1949-50: Max 374 Min 1 Mean 37.9 Ac-ft 27,410

* Discharge measurement made on this day.

Note.--No gage-height record Feb. 1 to Mar. 11; discharge estimated.

Paltu River near Gardez, Afghanistan
Discharge, in cubic feet per second, water year October 1950 to September 1951

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2	5	6				27	33	25		19	10
2	2	5	7				31	31	25		19	10
3	2	5	7			8	31	31	23	21	19	10
4	2	5	7				31	31			19	10
5	2	5	6				31	39		21	19	10
6	2	5	6				31	45		21	18	10
7	2	5	6				42	42		23	18	10
8	2	6	7			12	56	39		23	18	10
9	2	6	7				45	39		21	18	10
10	2	6	6				42	36		21	18	10
11	2	6	6				45	36		21	100	10
12	2	6	6				45	39		21	29	10
13	2	6	6			16	42	39		25	19	10
14	2	6	6				39	36		27	16	10
15	2	6	6	6	7		39	33		25	16	10
16	2	5	6				36	33		23	16	11
17	2	6	6				36	33	22	21	15	11
18	2	6	7			19	36	31		21	15	11
19	*4	6	6				33	31		21	15	11
20	4	6	6			*19	33	31		21	15	11
21	4	6	6			19	31	29		19	14	11
22	4	6	6			19	31	29		19	14	11
23	5	6	5			21	31	29		19	14	11
24	5	6	7			27	31	29		19	13	11
25	5	6	7			25	31	29		19	11	11
26	5	6	7			27	33	29		19	11	10
27	5	6	7			31	31	27		19	11	10
28	5	6	6			31	33	29		19	11	10
29	5	7	6		-	29	33	27		19	11	10
30	5	7	6			29	36	29		19	11	10
31	5		6			27		27	-	19	10	
Total	97	174	195	180	196	560	1,072	1,021	667	649	572	310
Mean	3.1	5.8	6.3	6	7	18.1	36	33	22.2	20.9	18.5	10.3
Ac-ft	192	345	387	357	389	1,110	2,130	2,030	1,320	1,290	1,130	615

Calendar year 1950: Max 374 Min 1 Mean 38.4 Ac-ft 27,770
Water year 1950-51: Max 100 Min 2 Mean 15.6 Ac-ft 11,160

* Discharge measurement made on this day.
Note.—No gage-height record Jan. 1 to Mar. 19, June 4 to July 4; discharge estimated on basis of records for Seraj River near Ghazni.

Paltu River near Gardez, Afghanistan
Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	10	13	15	14	16	16						
2	10	14	15	14	15	16						
3	10	14	15	14	16	16						
4	11	14	15	15	16	19						
5	11	14	15	15	16	19						
6	13	14	15	16	16	19						
7	13	14	14	16	16	18						
8	13	14	14	16	15							
9	13	14	15	15	15							
10	13	14	15	15	15							
11	13	14	15	15	15							
12	13	14	15	15	16							
13	11	14	15	15	18							
14	11	14	15	15	18							
15	11	14	15	15	19		18					
16	11	14	15	15	18							
17	13	14	15	16	18	20						
18	13	14	14	15	16							
19	13	14	15	15	16							
20	13	14	15	16	16							
21	13	14	15	16	15							
22	14	14	15	16	16							
23	14	14	15	15	16							
24	14	14	15	15	16							
25	14	15	15	15	16							
26	14	16	16	15	16							
27	14	16	16	16	16							
28	14	16	16	16	18							
29	14	15	15	15	16							
30	14	15	15	16								
31	13		15	16								
Total	390	428	465	473	471	603						
Mean	12.6	14.3	15	15.3	16.2	19.5						
Ac-ft	774	849	922	938	934	1200						

Calendar year 1951: Max 100 Min 6 Mean 17.8 Ac-ft 12,920
Water year 1951-52: Max Min Mean Ac-ft

Note.--No gage-height racord Mar. 8 to Apr. 14; discharge for Mar. 8-31 estimated.

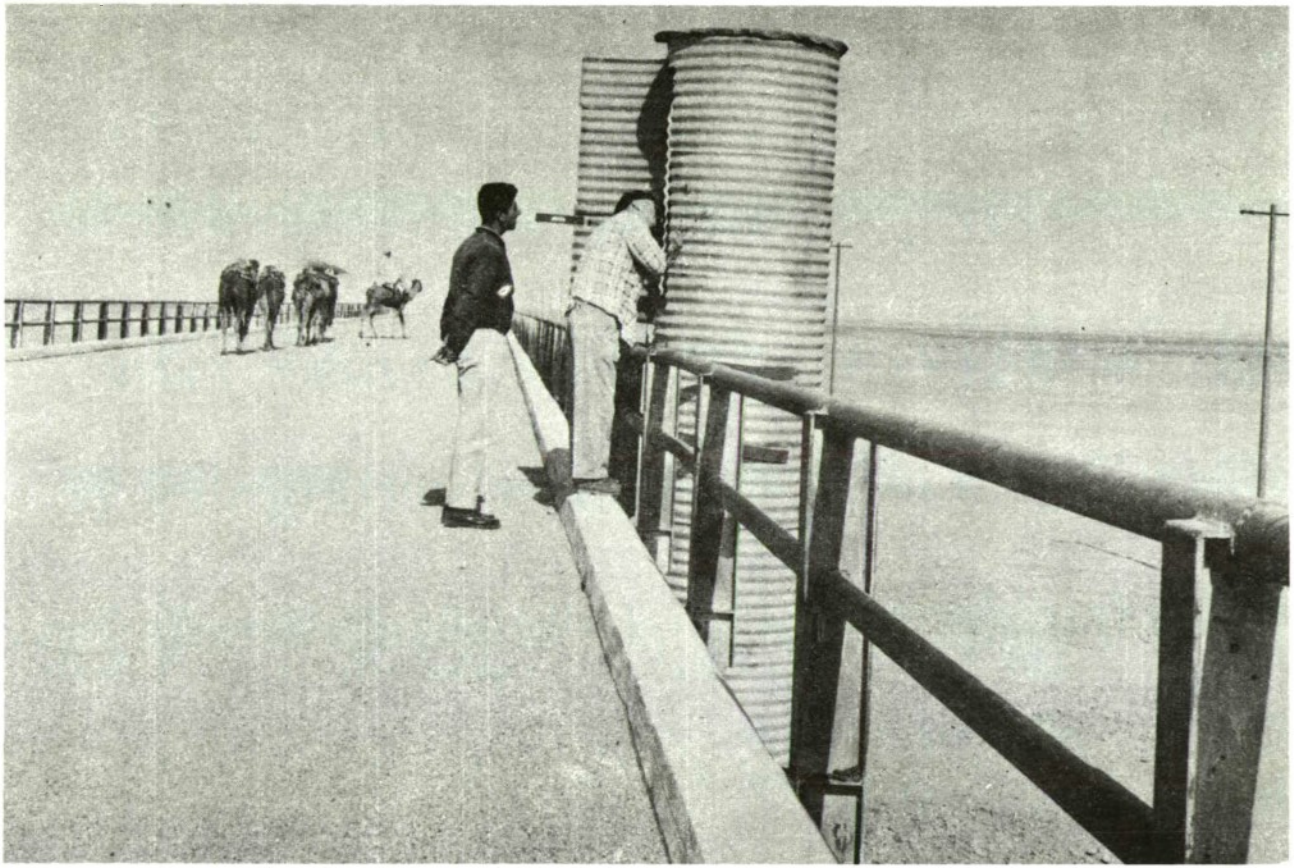


Figure 9.--Arghastan River near Kandahar showing water-stage recorder well and shelter.

Arghastan River near Kandahar, Afghanistan

Location.—Lat 31°26' N., long 65°54' E., on upstream side of bridge on Kandahar to Chaman (Pakistan) road, about 22 kilometers upstream from Dori River, and 28 kilometers southeast of Kandahar.
Drainage area.—12,820 sq mi, approximately, of which about 6,200 sq mi (above outlet of Lake Ab-i-Istada) is probably noncontributing.
Records available.—October 1952 to September 1959; extremes only for water year 1954 and 1959.
Gage.—Water-stage recorder. Datum of gage is at mean sea level (from MKA surveys based on Survey of India datum).
Average discharge.—5 years (1952-53, 1954-58) 250 cfs (181,000 acre-ft per year).
Extremes.—Maximum discharge for the water years 1953-59 are given in the following table:

Water Year	Date	Gage Height (meters)	Discharge (cfs)
1953	Feb. 14, 1953	1020.0	11,100
1954	Feb. 13, 1954	1021.09	42,100
1955	Mar. 16, 1955	1019.98	2,870
1956	July 20, 1956	1020.80	21,900
1957	Apr. 8, 1957	1020.01	5,180
1958	Dec. 14, 1957	1020.40	5,980
1959	About Mar. 2, 1959	1019.98	4,320

Remarks.—Records are fair. Extensive diversions for irrigation above the station. Discharge measurements listed below were made in water year 1959.

Date	Gage Height (meters)	Discharge (cfs)
Dec. 25, 1958	1019.00	78.2
Jan. 27, 1959	1019.155	192
Feb. 19, 1959	1019.60	879
Mar. 25, 1959	1018.79	175
Apr. 4, 1959	1019.74	2,230

Arghastan River near Kandahar, Afghanistan
Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1				0	0	180						
2				0	0	141	*0					
3				0	277	*95		*0				
4				0	1,070	62						
5				0	216	52						
6				0	95	42						
7				0	105	32						
8				0	105	26						
9				0	336	0						
10				0	2,840	0						
11				0	*2,320	0						
12				0	3,500	*0						
13				0	3,940	0						
14				26	5,450	0						
15				0	*5,510	0						
16				0	*3,260	0						
17				0	*2,030	0						
18				0	1,320	0						
19				0	*933	0						
20				0	738	0						
21				0	*604	0						
22				0	520	0						
23				0	496	0						
24				0	309	0						
25				0	*336	0						
26				0	292	0						
27				0	243	0						
28				0	*207	0						
29			*0	0	-	0						
30				0	-	0						
31				0	-	0						
Total	0	0	0	26	37,052	630	0	0	0	0	0	0
Mean	0	0	0	0.8	1,323	20.3	0	0	0	0	0	0
Ac-ft	0	0	0	52	73,490	1,250	0	0	0	0	0	0

Calendar year 1952: Max - Min - Mean - Ac-ft -
Water year 1952-53: Max 5,510 Min 0 Mean 103 Ac-ft 74,790

* Discharge measurement or observation of no flow made on this day.

Argnastan River near Kandahar, Afghanistan
Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June	July	Aug.	Sept.
1				0	42	0	0	0				
2				0	35	0		0				
3				0	35	0		0				
4				0	35	0		0				
5				0	31	0		0				
6				0	23	0		0				
7				0	19	*0		0				
8				0	15	0		0				
9				0	6	0		0				
10				0	0	0		0				
11				0	0	0		0				
12				0	0	0		0				
13				0	0	*0		0				
14				0	0	0		0				
15				0	0	315		0				
16				0	0	2,470		0				
17				0	0	1,650		0				
18				0	0	*918	*0	0				
19				0	0	*550		0				
20				*0	0	*352		0				
21			*0	0	0	*223		0				
22				0	0	143		0				
23				0	0	106		0				
24				0	0	79		16				
25				0	0	52		0				
26				0	0	27		0				
27				0	0	15		0				
28				19	0	0		0				
29				63	-	0		0				
30				88	-	0		0				
31				63	-	0		0				
Total	0	0	0	233	241	6,900	0	16	0	0	0	0
Mean	0	0	0	7.57	8.6	223	0	0.5	0	0	0	0
Ac-ft	0	0	0	462	478	13,690	0	32	0	0	0	0

Calendar year 1954: Max - Min - Mean - Ac-ft -
Water year 1954-55: Max 2,470 Min 0 Mean 20.2 Ac-ft 14,660

* Discharge measurement or observation of no flow made on this day.

Arghastan River near Kandahar, Afghanistan
Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1			0	a20	8	*980	3,200			0	4,640	a4
2			0	1,860	8	796	2,600			0	2,720	a2
3			0	*1,160	8	680	2,020			0	*1,630	a1
4			0	645	8	610	1,630			0	1,040	0
5			0	467	6	575	1,280			0	715	0
6			0	330	4	548	1,040			0	521	0
7			0	281	2	575	1,120			0	418	0
8			0	219	0	494	1,420			0	330	0
9			0	122	0	418	2,200			0	264	0
10			0	138	0	352	1,280			0	233	0
11			0	118	0	297	1,100			0	190	0
12			0	108	0	272	1,490			0	154	0
13			573	99	112	233	1,040			0	122	0
14			2,120	90	521	233	750			0	104	0
15			911	73	330	352	548			0	94	0
16			494	a80	297	610	418			2,960	76	0
17			374	a100	233	1,160	314			7,170	65	0
18			264	a120	175	934	248			11,900	54	0
19			175	a120	*154	732	190			9,910	48	0
20			143	a110	133	*911	154			*12,600	48	0
21			264	a100	128	*911	122			*5,060	43	0
22			190	a90	113	888	76			*1,970	38	0
23			104	85	113	888	46			2,410	29	0
24			85	76	113	3,910	21			2,720	29	0
25			70	65	113	4,500	11			12,400	26	0
26			60	48	314	*4,080	8	*0		3,080	24	0
27			*48	*43	1,400	3,320	a4			842	*24	0
28			38	38	2,120	2,720	a2			*4,570	20	0
29			32	32	1,280	2,600	0			12,600	16	0
30			a30	29	-	2,840	0			9,700	12	0
31			a25	20	-	2,960	-			6,800	8	-
Total	0	0	6,000	6,886	7,693	41,379	24,332	0	0	106,692	13,735	7
Mean	0	0	194	222	265	1,335	811	0	0	3,442	443	0.23
Ac-ft	0	0	11,900	13,660	15,260	82,070	48,260	0	0	211,600	27,240	14

Calendar year 1955: Max 2,470 Min 0 Mean 36.7 Ac-ft 26,560
Water year 1955-56: Max 12,600 Min 0 Mean 56.5 Ac-ft 410,000

* Discharge measurement or observation of no flow made on this day.
a No gage-height record; discharge estimated.

Arghastan River near Kandahar, Afghanistan
Discharge, in cubic feet per second, water year October 1956 to September 1957

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1				0	1,000	1,020	1,500	400	110			
2				0	1,500	1,240	1,000	370	105			
3				0	2,060	1,370	900	1,290	100			
4				0	2,030	1,370	800	3,480	100			
5				0	2,000	1,520	700	1,930	90			
6				0	2,160	1,370	600	767	80			
7				0	2,920	*1,370	2,000	500	70			
8				315	2,440	1,320	4,000	400	60			
9				325	2,360	1,300	*3,480	370	50			
10				*287	2,060	2,030	2,560	350	30			
11				260	2,240	2,160	2,680	636	10			
12			*0	278	2,100	1,860	1,320	500	10			
13				*1,560	2,000	1,470	942	400	10			
14				*598	1,900	1,340	1,170	350	0			
15				415	1,820	1,170	2,130	330	0			
16				367	1,790	1,020	1,470	300	0			
17				335	1,720	1,140	796	280	0			
18				325	1,790	2,160	669	260	0			
19				335	1,930	2,440	553	*203	0			
20	*0			345	1,860	1,930	500	*200	0			
21				361	1,690	1,860	480	180	0			
22				367	1,440	1,790	470	170	0			
23				403	1,400	1,790	460	160	0			
24				464	1,220	1,860	450	150	0			
25				680	1,100	1,520	450	140	0			
26				1,470	1,020	1,370	450	135	0			
27				2,000	1,020	1,300	553	130	0			
28				1,720	1,000	2,200	500	125	0			
29				*1,520	-	*2,680	450	120	0			
30				1,320	-	3,000	430	115	0			
31				1,140	-	2,000	-	110	-			
Total	0	0	0	17,190	49,570	51,970	34,463	14,851	825	0	0	0
Mean	0	0	0	555	1,770	1,676	1,149	479	27.5	0	0	0
Ac-ft	0	0	0	34,100	98,320	103,100	68,360	29,460	1,636	0	0	0

Calendar year 1956: Max 12,600 Min 0 Mean 548 Ac-ft 398,100
Water year 1956-57: Max 4,000 Min 0 Mean 463 Ac-ft 335,000

* Discharge measurement or observation of no flow made on this day.

Note.—No gage-height record Mar. 30 to Apr. 8; Apr. 20-26; Apr. 28 to May 2; May 7-10, 12-18, May 21 to June 13; discharge estimated on basis of discharge measurements and records for Arghandab River above Arghandab Reservoir.

Arghastan River near Kandahar, Afghanistan
Discharge, in cubic feet per second, water year October 1957 to September 1958

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1			0	360	332	312		*0				
2			0	355	295	260						
3			0	355	281	234						
4			0	*352	260	186						
5			0	337	225	167			*0			
6			0	327	217	148						
7			15	322	210	194						
8			20	320	200	131						
9			40	318	195	110						
10		*0	100	317	190	94						
11			300	300	190	78						
12			600	280	185	62						
13			1,000	270	185	54						
14			*3,800	270	180	46						
15			2,500	270	175	40						
16			*1,300	270	170	35						
17			900	270	200	30						
18			800	270	221	25						
19			700	450	210	21						
20			640	632	200	19						
21			560	590	180	17						
22			500	540	165	15						
23			470	480	155	13						
24			450	430	145	12						
25			430	390	130	10						
26			410	372	114	8						
27			400	332	217	6						
28			390	317	*347	4						
29			380	312	-	2						
30			370	251	-	0						
31			360	*280	-	*0						
Total	0	0	17,435	10,939	5,774	2,333						
Mean			562	353	206	75.3						
Ac-ft			34,580	21,700	11,450	4,630						

Calendar year 1957: Max 4,000 Min 0 Mean 510 Ac-ft 369,600
Water year 1957-58: Max 3,800 Min 0 Mean 100 Ac-ft 72,360

* Discharge measurement or observation of no flow made on this day.
Note.—No gage-height record Dec. 7 to Jan. 3; Jan. 8, 9, 11-25; Feb. 8-25; Mar. 8-29; discharge estimated by available record, rainfall and records for station Arghandab River above Arghandab Reservoir.

HELMAND RIVER BASIN

Arghandab River near Kala Bist, Afghanistan

Location.--Lat 31° 30' N., long 64° 20' E., on right bank 5 kilometers northeast of ancient fort of Kala Bist, 6 kilometers upstream from mouth, 8 kilometers southeast of Lashkar Gah, and about 185 kilometers downstream from Arghandab Dam.

Drainage area.--31,600 sq mi, approximately, includes that of Ab-i-Istada (about 6,800 sq mi is probably non-contributing).

Records available.--October 1947 to September 1960.

Gage.--Water-stage recorder. Altitude of gage is 720 meters from survey of India map.

Average discharge.--13 years, 1069 cfs (774,570 acre-ft per year).

Extremes.--Maximum and minimum discharges for the water years 1947-60 are given in the following table:

Water year	Date	Maximum Gage Height (Meters)	Discharge (cfs)	Date	Minimum Gage Height (Meters)	Discharge (cfs)
1948	(a)	-	-		No flow for many days	
1949	(a)	-	-		do	
1950	Jan. 30, 1950	b3.80	60,000		do	
1951	Mar. 28, 1951	1.54	9,660		do	
1952	Feb. 16, 1952	.97	2,010		do	
1953	Feb. 16, 1953	2.11	18,700		do	
1954	Feb. 14, 1954	3.30	44,400		do	
1955	Jan. 31, 1955	.65	991		do	
1956	July 27, 1956	3.15	35,000		do	
1957	Apr. 6, 1957	2.90	32,700	Sept. 8-19, 1957	0.18	18
1958	Dec. 12, 1957	3.015	34,900	Oct. 1, 1957	.34	41
1959	Mar.2; Apr.5, 1959	1.64	9,040	Aug. 17, 1959	.37	2
1960	Apr. 18, 1960	1.85	12,600	Mar.10-12;Aug.10-29, 1960	-	5

a Not determined.
b From floodmark.

Remarks.--Records good except those for 1947-48, 1949-51 and those for periods of no gage-heights which are fair. Flow is regulated by Arghandab Reservoir. Extensive diversions for irrigation upstream.

Arghandab River near Kala Bist, Afghanistan
Discharge, in cubic feet per second, water year October 1947 to September 1948

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1					0	0	1,720	1,580				
2					0	0	1,720	1,450				
3					0	0	1,730	1,290				
4					0	0	1,770	1,160				
5					0	80	1,800	1,120				
6					0	100	1,800	1,050				
7					0	120	*1,620	990				
8					0	2,650	1,450	970				
9					0	4,500	1,450	870				
10					0	1,750	1,580	830				
11					0	2,220	1,780	780				
12					0	1,750	1,900	730				
13					0	1,400	2,000	680				
14					0	1,200	2,050	630				
15					0	1,050	2,110	580				
16					0	980	2,170	530				
17					0	900	2,310	490				
18					0	1,250	2,480	450				
19					0	1,200	2,460	410				
20					0	1,400	2,460	370				
21					0	1,350	2,550	330				
22					*0	1,430	2,460	290				
23					0	1,430	2,460	250				
24					60	1,430	2,310	210				
25					120	1,470	2,170	170				
26					70	1,430	2,000	140				
27					40	1,650	1,900	110				
28					20	1,660	1,780	50				
29					10	1,680	1,670	40				
30					-	1,690	1,620	30				
31					-	1,700	-	20				
Total	0	0	0	0	320	39,470	59,280	18,600	0	0	0	0
Mean	0	0	0	0	11.0	1,273	1,976	600	0	0	0	0
Ac-ft	0	0	0	0	635	78,290	117,600	36,890	0	0	0	0

Calendar year 1947: Max - Min - Mean - Ac-ft
Water year 1947-48: Max 4,500 Min 0 Mean 322 Ac-ft 233,400

*Discharge measurement or observation of no flow made on this day.
Note.—No gage-height record Mar. 5-17, Mar. 19 to Apr. 6, May 5-31; discharge estimated on basis of records for Arghandab River at damsite.

Arghandab River near Kala Bist, Afghanistan
Discharge, in cubic feet per second, water year October 1948 to September 1949

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1					0						0	
2					0						0	
3					0						0	
4					0						0	
5					0						0	
6					0						120	
7					0						120	
8					0						120	
9					0						120	
10					*433						120	
11					375						0	
12					280						0	
13											0	
14											0	
15											0	
16											0	
17											0	
18											0	
19							*2,977				0	
20											0	
21											0	
22											0	
23											0	
24											0	
25											0	
26								*129			0	
27											0	
28											0	
29											0	
30											0	
31											0	
Total	-	-	-	-	-	-	-	-	-	-	600	-
Mean	0	0	0	0	a400	a1,000	a2,000	a200	0	0	19.4	0
Ac-ft	0	0	0	0	22,210	61,490	119,000	12,300	0	0	1,190	0

Calendar year 1948: Max - Min - Mean - Ac-ft 233,400
Water year 1948-49: Max - Min 0 Mean 300 Ac-ft 216,200

*Discharge measurement made on this day.
a Estimated.
Note.—No gage-height record Feb. 13 to Apr. 18, Apr. 20 to May 25, May 27-30; discharge estimated.

Arghandab River near Kala Bist, Afghanistan
Discharge, in cubic feet per second, water year October 1949 to September 1950

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1				0	*3,300	*3,800	7,390	3,770	1,150	100		
2				0	3,200	3,800	11,200	3,860	1,020	90		
3				0	3,100	4,000	18,700	3,860	954	80		
4				0	3,100	4,000	15,100	3,860	920	60		
5				0	3,100	4,100	12,400	3,860	859	50		
6				0	3,100	4,200	11,000	3,860	828	30		
7				0	3,100	4,200	9,240	3,860	768	20		
8				0	3,000	4,400	8,420	4,140	706	10		
9				0	3,000	4,500	7,630	4,620	676	0		
10				0	2,600	4,600	7,030	4,930	646	0		
11				0	2,600	4,900	6,440	5,030	615	0		
12				0	2,600	5,000	6,110	5,140	587	0		
13				0	2,600	5,500	6,220	5,140	559	0		
14				0	2,600	6,000	5,670	5,450	530	0		
15				0	2,600	9,200	5,560	5,780	500	0		
16				0	2,600	6,600	5,450	5,560	460	0		
17				0	2,600	5,700	5,450	5,250	430	0		
18				0	2,600	5,100	5,450	4,510	400	0		
19				0	2,600	4,600	5,350	4,050	380	0		
20				0	2,600	4,500	5,140	3,770	350	0		
21				0	2,600	4,600	5,030	3,500	330	0		
22				0	2,600	4,800	4,510	2,940	300	0		
23				0	2,600	5,600	4,320	2,640	280	0		
24				0	2,900	6,000	4,140	2,280	260	0		
25				0	3,000	9,700	4,050	1,960	240	0		
26				0	3,300	9,100	4,050	1,820	220	0		
27				0	3,500	6,800	3,860	1,590	200	0		
28				0	3,800	4,720	3,860	1,480	180	0		
29				300	-	5,030	3,770	1,370	160	0		
30				*19,000	-	5,890	3,770	*1,260	130	0		
31				21,000	-	7,150	-	1,220	-	0		
Total	0	0	0	40,300	77,800	168,290	206,310	112,350	15,638	450	0	0
Mean	0	0	0	1,300	2,779	5,429	6,877	3,624	521	14.5	0	0
Ac-ft	0	0	0	79,930	154,300	333,800	409,200	222,800	31,020	893	0	0

Calendar year 1949: Max - Min 0 Mean - Ac-ft 216,200
Water year 1949-50: Max 21,000 Min 0 Mean 1,702 Ac-ft 1,232,000

* Discharge measurement made on this day.

Note.— Doubtful or no gage-height record Jan. 29 to Mar. 27; June 14 to July 8; discharge estimated on basis of records for station below Arghandab damsite.

Arghandab River near Kala Bist, Afghanistan
Discharge, in cubic feet per second, water year October 1950 to September 1951

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1					0	272	4,830	a2,700	1,120	59		
2					0	297	4,720	a2,800	1,020	39		
3					0	346	4,620	2,780	1,020	24		
4					0	346	4,510	2,540	954	24		
5					0	475	4,620	2,700	a880	a20		
6					0	987	4,320	3,590	a800	a20		
7					0	1,190	3,770	5,890	a730	a10		
8					0	1,050	3,500	7,390	a655	a10		
9					2	646	3,500	6,440	a575	a10		
10					3	449	3,340	4,830	a520	a10		
11					10	449	3,020	3,770	a460	a5		
12					15	449	2,940	2,940	372	a2		
13					19	449	2,940	2,280	372	0		
14					29	449	2,940	2,050	372	0		
15					39	449	2,780	1,820	346	0		
16					39	503	2,780	1,520	321	0		
17					59	516	2,780	1,400	297	0		
18					69	859	2,780	1,290	272	0		
19					79	1,190	*2,640	1,260	223	0		
20					91	*1,590	2,780	1,260	190	0		
21					116	1,720	2,640	1,260	190	0		
22					116	1,720	2,640	1,260	174	0		
23					141	1,720	2,520	1,260	157	0		
24					157	1,860	2,460	1,260	141	0		
25					174	1,860	2,460	1,190	129	0		
26					207	2,050	2,460	1,190	91	0		
27					207	3,770	2,520	1,150	79	0		
28					248	8,290	a2,500	1,150	79	0		
29					-	9,380	a2,600	1,150	79	0		
30					-	8,020	a2,700	1,150	59	0		
31					-	6,550	-	1,120	-	0		
Total	0	0	0	0	1,820	60,000	95,610	74,490	12,677	233	0	0
Mean	0	0	0	0	65.0	1,935	3,187	2,403	423	7.52	0	0
Ac-ft	0	0	0	0	3,610	119,000	189,600	147,700	25,140	462	0	0

Calendar year 1950: Max 21,000 Min 0 Mean 1,702 Ac-ft 1,232,000
Water year 1950-51: Max 9,380 Min 0 Mean 671 Ac-ft 485,500

* Discharge measurement made on this day.
a No gage-height record; discharge interpolated.
Note.— Discharge for period Feb. 8 to Mar. 19 computed from graph based on information furnished by watchman.

Arghandab River near Kala Bist, Afghanistan
Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1					0	372	676	297	0			
2					0	372	646	297	0			
3					0	372	646	297	0			
4					0	372	615	297	0			
5					0	372	587	297	0			
6					0	372	559	297	0			
7					0	372	559	297	0			
8					0	346	531	297	0			
9					0	321	531	297	0			
10					0	297	531	297	0			
11					0	248	531	272	0			
12					0	223	503	272	0			(*)
13					0	190	449	272	0			
14					2	248	449	272	0			
15					372	475	423	248	a2			
16					1,770	587	398	248	a5			
17					1,590	615	372	223	a5			
18					1,480	676	372	223	a5			
19					1,400	706	346	207	2			
20					1,370	737	346	190	0			
21					1,290	737	346	190	0			
22					1,190	768	346	116	0			
23					1,120	768	346	69	0			
24					1,090	768	321	15	0			
25					1,050	798	321	0	0			
26					987	768	321	0	0			
27					768	768	321	0	0			
28					615	768	297	0	0			
29					449	737	297	0	0			
30					-	706	297	0	0			
31					-	706	-	0	-			
Total	0	0	0	0	16,543	16,565	13,283	5,777	19	0	0	0
Mean	0	0	0	0	570	534	443	186	0.63	0	0	0
Ac-ft	0	0	0	0	32,810	32,860	26,350	11,460	38	0	0	0

Calendar year 1951: Max 9,380 Min 0 Mean 671 Ac-ft 485,500
Water year 1951-52: Max 1,770 Min 0 Mean 143 Ac-ft 103,500

* Observation of no flow made on this day.
a No gage-height record; discharge estimated on basis of recorded range in stage.

Arghandab River near Kala Bist, Afghanistan
Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1				0	503	200	100	69	0			
2				0	503	170	100	69	2			
3				0	503	130	100	64	0			
4				0	503	100	110	59	0			
5				0	503	80	130	54	0			
6				0	859	60	140	59	0			
7				0	646	50	140	54	197			
8				0	*559	40	140	54	141			
9				0	630	30	140	49	98			
10				0	1,050	20	140	44	69			
11				0	8,370	10	140	39	49			
12				0	8,200	5	*141	39	34			
13				0	6,010	0	157	34	24			
14				0	12,400	0	182	39	19			
15				70	13,000	0	174	29	15			
16				372	12,600	0	190	*29	*12			
17				423	8,000	0	174	26	10			
18				423	5,000	0	166	24	8			
19				*475	3,000	0	157	22	3			
20				475	*1,890	0	141	17	24			
21				475	1,000	0	129	10	39			
22				503	700	0	135	10	34			
23				503	550	0	129	10	24			
24				503	450	0	110	8	19			
25				503	350	0	110	8	8			
26				531	300	30	116	5	5			
27				531	250	60	104	4	2			(*)
28				531	230	100	98	3	1			
29				503	-	100	91	2	0			
30				503	-	100	79	0	0			
31				503	-	100	-	1	-			
Total	0	0	0	7,827	88,559	1,385	3,963	924	835	0	0	0
Mean	0	0	0	252	3,163	44.7	132	29.8	27.8	0	0	0
Ac-ft	0	0	0	15,520	175,700	2,740	7,860	1,830	1,660	0	0	0

Calendar year 1952: Max 1,770 Min 0 Mean 143 Ac-ft 103,500
Water year 1952-53: Max 13,000 Min 0 Mean 284 Ac-ft 205,300

*Discharge measurement or observation of no flow made on this day.

Note.--No gage-height record Feb. 17-19, Feb. 21 to Apr. 11; discharge estimated on basis of records for station below Arghandab Dam and weather records.

HELMAND RIVER BASIN

Arghandab River near Kala Bist, Afghanistan

Discharge, in cubic feet per second, water year October 1953 to September 1954

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1		0	49	260	859	3,000	19,000	5,240	1,350	*248	116	*98
2		0	54	215	920	3,500	13,000	5,080	1,300	207	*92	104
3		0	49	198	768	6,000	*10,500	*5,030	1,300	207	98	104
4		5	79	215	691	10,000	8,830	5,030	1,300	207	98	104
5		5	49	813	615	8,000	7,750	4,930	1,200	190	98	110
6		8	49	4,830	615	5,000	*7,450	4,930	1,200	190	98	98
7		10	49	7,030	503	4,000	6,910	4,830	1,200	190	91	104
8		*10	49	4,620	462	3,300	6,220	4,830	1,150	190	85	98
9		12	54	3,860	449	2,900	5,890	4,800	1,150	190	74	122
10		15	69	2,640	475	2,600	5,670	4,800	1,150	190	91	129
11		17	69	1,630	1,920	2,400	5,450	4,700	1,100	190	182	129
12		19	64	1,150	12,100	2,200	5,350	4,600	1,100	190	182	116
13		19	74	954	28,600	2,100	5,240	4,400	1,100	190	157	129
14		22	74	828	*42,100	2,000	5,240	4,000	*1,040	190	149	135
15		22	69	737	30,000	1,900	5,190	3,600	1,000	190	149	*157
16		22	69	676	20,000	1,800	5,140	3,400	980	248	129	141
17		24	74	676	12,000	*1,800	5,140	3,200	*640	297	129	135
18		24	85	706	8,000	1,800	5,140	3,000	610	272	135	141
19		24	85	706	6,000	1,700	5,190	2,800	600	248	129	157
20		24	79	676	5,000	1,700	5,240	2,600	600	207	129	157
21		24	*79	661	4,500	1,700	5,240	2,400	640	174	122	174
22		24	85	587	4,000	1,700	5,240	2,200	600	157	116	174
23		29	104	531	3,600	1,700	5,450	*2,110	500	141	110	157
24		26	122	475	3,400	1,700	5,670	2,000	500	157	104	166
25		24	149	*436	3,200	1,800	6,380	1,900	500	157	98	157
26		26	*340	423	3,000	2,000	6,850	1,850	500	141	98	*174
27		24	531	398	3,000	2,400	6,550	1,800	300	129	98	150
28		26	545	372	3,000	2,980	6,110	1,700	250	129	91	140
29		44	462	449	-	4,180	5,560	1,600	250	116	91	140
30		44	*346	960	-	7,300	5,240	1,500	250	116	91	140
31		-	309	*963	-	17,600	-	1,400	-	116	91	-
Total	0	573	4,364	39,675	199,777	112,760	201,830	106,260	25,360	5,764	3,521	4,040
Mean	0	19.1	141	1,280	7,135	3,636	6,728	3,428	845	186	114	135
Ac-ft	0	1,140	8,660	78,690	396,300	223,700	400,300	210,800	50,300	11,430	6,980	8,010

Calendar year 1953: Max 13,000 Min 0 Mean 297 Ac-ft 215,100
Water year 1953-54: Max 42,100 Min 0 Mean 1,929 Ac-ft 1,396,000

* Discharge measurement made on this day.

Note.— No gage-height record Feb. 15 to Mar. 27, May 9 to June 30, Sept. 27-30; discharge estimated on basis of records for station below Arghandab Dam and weather records.

Arghandab River near Kala Bist, Afghanistan
Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	140	250	340	472	812	283	19	4	27	1		
2	140	250	340	485	795	274	19	3	19	1		
3	150	250	350	605	812	265	13	3	16	1		
4	150	250	350	761	795	234	13	3	16	1		
5	150	250	350	778	761	192	12	3	16	1		
6	160	260	360	863	710	160	12	4	19	1		
7	160	260	360	898	665	134	10	99	19	1		
8	160	260	370	846	472	* 99	10	106	19	1		
9	172	270	375	829	365	78	10	192	16	1		
10	178	270	385	829	405	70	11	166	16	1	(*)	
11	172	270	415	829	460	61	30	128	16	1		
12	185	280	425	812	460	48	24	*112	16	1		
13	185	280	425	795	472	54	*19	104	13	1		
14	185	290	425	778	472	300	11	* 82	13	0		
15	185	290	448	778	448	192	11	70	12	0		
16	199	300	460	761	448	86	9	67	11	0		
17	206	300	472	744	498	61	9	61	11	0		
18	220	300	485	727	535	778	6	58	9	0		
19	220	310	472	727	522	650	6	51	8	0		
20	220	310	460	778	510	460	6	44	4	0		
21	220	310	460	812	510	309	6	41	2	0		
22	234	320	460	812	485	227	6	54	2	0		(*)
23	234	320	460	795	*498	160	6	67	*2	0		
24	*248	320	460	795	460	*116	6	61	2	0		
25	250	330	472	778	415	91	6	48	2	0		
26	250	330	472	*795	*375	67	*5	44	2	0		
27	250	*335	472	795	318	48	5	41	2	0		
28	250	335	*472	795	300	38	5	44	2	0		
29	250	335	460	812	-	30	4	38	2	0		
30	250	335	460	829	-	22	4	*32	2	0		
31	250	-	460	936	-	22	-	30	-	0		
Total	6,223	8,770	13,175	24,049	14,779	5,447	313	1,914	316	13	0	0
Mean	201	292	425	775	528	176	10.4	61.7	10.5	4.2	0	0
Ac-ft	12,340	17,400	26,130	47,640	29,310	10,800	620	3,800	626	25	0	0

Calendar year 1954: Max 42,100 Min 74 Mean 1,992 Ac-ft 1,442,000
Water year 1954-55: Max 936 Min 0 Mean 205 Ac-ft 148,700

*Discharge measurement or observation of no flow made on this day.
Note.--No gage-height record Oct. 1-8, Oct. 25 to Nov. 26, Nov. 28 to Dec. 8, June 24 to July 5; discharge estimated on basis of records for station below Arghandab Dam or interpolated.

Arghandab River near Kala Bist, Afghanistan
Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1			0	405	140	1,910	10,800	5,530	1,000	51	a7,000	506
2			0	394	125	1,640	11,400	5,160	948	45	a5,000	495
3			0	568	107	1,420	11,100	4,820	887	41	a4,000	484
4			0	1,120	92	1,170	*11,700	4,570	802	36	a3,500	473
5			0	1,480	80	1,000	11,700	4,280	730	30	a3,000	450
6			0	1,340	67	930	10,700	*4,020	673	23	a2,500	439
7			0	1,080	57	901	9,790	3,750	619	20	a2,200	439
8			0	*814	51	858	10,400	3,520	594	17	a2,000	428
9			1	730	51	802	11,400	3,360	556	15	a1,900	*428
10			*1	644	54	730	11,500	*3,220	530	14	a1,600	439
11			3	594	48	673	10,800	3,180	506	10	a1,500	439
12			7	568	51	619	9,860	3,120	473	8	a1,400	450
13			84	518	51	531	9,790	3,020	450	6	a1,300	450
14			2,100	484	48	495	10,000	2,880	405	*5	a1,100	462
15			3,080	462	48	518	9,660	2,760	386	6	a1,000	462
16			3,360	450	216	506	9,590	2,640	360	1,750	930	450
17			2,580	428	301	484	*9,140	2,520	*338	4,440	816	450
18			1,910	405	484	*632	9,320	2,400	301	24,600	730	450
19			1,300	386	518	901	9,380	2,280	262	20,900	687	462
20	(*)		1,080	367	270	1,500	9,590	2,230	224	19,700	632	462
21			*716	357	230	1,750	9,450	2,070	198	19,400	594	473
22			632	*338	166	1,750	*9,320	1,910	179	*13,100	606	473
23			619	318	*130	1,720	9,020	1,800	156	8,090	568	473
24			*606	293	111	1,860	8,320	1,660	135	7,420	556	462
25			594	277	92	7,460	7,480	1,520	120	20,000	530	462
26			543	262	92	16,700	7,300	1,390	99	27,500	506	473
27			495	238	96	15,900	7,030	*1,280	88	*a30,000	495	473
28			506	224	493	11,500	6,730	1,230	76	a25,000	495	473
29			450	204	1,750	9,720	6,380	1,170	70	a27,000	495	484
30			428	179	-	9,020	*5,900	1,120	60	a20,000	506	495
31			416	161	-	9,360	-	1,040	-	a10,000	506	-
Total	0	0	21,509	16,118	5,819	105,460	284,550	85,450	12,325	279,227	48,652	13,859
Mean	0	0	694	520	201	3,402	9,485	2,756	411	9,007	1,569	462
Ac-ft	0	0	42,660	31,970	11,540	209,200	564,400	169,500	24,450	553,800	96,500	27,490

Calendar year 1955: Max 3,360 Min 0 Mean 187 Ac-ft 135,500
Water year 1955-56: Max 16,700 Min 0 Mean 2,385 Ac-ft 1,732,000

* Discharge measurement or observation of no flow made on this day.
a No gage-height record; discharge estimated on basis of peak stage and records for station below Arghandab Dam and Arghastan River near Kandahar.

Arghandab River near Kala Bist, Afghanistan
Discharge, in cubic feet per second, water year October 1956 to September 1957

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	495	376	376	758	3,020	2,610	7,420	8,000	4,500	1,120	482	22
2	495	396	376	830	2,880	2,670	7,140	8,000	4,500	1,100	410	22
3	495	416	376	858	2,850	2,700	7,030	8,400	4,400	1,080	374	21
4	495	428	386	916	2,950	2,820	7,030	9,000	4,200	1,060	320	20
5	495	416	386	984	3,080	*2,920	10,800	9,400	4,000	1,040	280	20
6	495	405	386	1,000	3,150	2,920	17,200	9,000	3,800	1,030	250	20
7	495	405	386	1,000	3,150	2,850	19,000	8,600	3,600	995	*213	19
8	495	405	386	1,080	3,150	2,880	18,000	8,200	3,500	995	164	18
9	495	396	386	1,390	3,220	2,880	17,000	8,000	*3,260	995	135	18
10	462	396	386	2,100	3,220	2,880	15,000	7,800	2,950	995	110	18
11	450	*386	386	2,020	3,220	2,280	13,000	7,800	2,870	995	87	18
12	428	386	396	1,990	3,180	2,430	12,000	7,800	2,790	1,030	70	18
13	*428	386	396	3,150	3,150	2,170	11,000	7,800	2,710	1,040	61	18
14	416	386	396	9,860	3,080	2,460	11,000	7,600	2,630	1,060	*52	18
15	405	376	*386	*5,800	2,950	2,760	11,000	7,200	2,230	1,060	44	18
16	405	376	386	3,360	2,880	2,640	11,000	7,000	2,090	1,030	37	18
17	396	376	386	*2,760	2,790	2,700	11,000	6,600	2,000	*1,030	32	18
18	396	376	386	2,520	2,700	*3,360	10,000	6,600	1,940	1,000	30	18
19	396	367	386	2,310	2,580	*10,000	9,600	6,400	1,790	1,000	28	18
20	396	367	396	2,200	2,550	18,200	9,400	6,200	1,670	1,000	26	22
21	405	367	405	2,140	2,520	13,200	9,200	6,200	1,610	1,000	26	25
22	396	376	405	2,120	2,580	10,400	9,000	6,000	1,480	960	26	*27
23	386	386	405	2,100	2,640	10,300	8,000	5,800	1,420	930	25	26
24	386	386	416	2,120	2,670	9,450	8,600	5,600	1,420	900	24	27
25	376	386	416	2,260	*2,580	8,200	8,400	5,400	1,320	855	24	28
26	376	396	428	2,490	2,580	7,750	8,000	5,200	1,200	785	23	28
27	376	396	428	2,760	2,580	7,420	*7,600	5,000	1,190	750	23	28
28	367	386	428	3,320	2,580	7,240	8,000	4,800	1,190	*700	23	29
29	367	376	543	3,390	-	7,640	8,200	4,700	1,190	*625	22	31
30	367	376	619	3,320	-	8,040	8,000	4,500	1,140	600	22	40
31	367	-	658	3,180	-	7,860	-	4,500	-	562	22	-
Total	13,202	11,652	12,881	76,086	80,480	174,630	317,620	213,100	74,650	29,322	3,465	671
Mean	426	388	416	2,454	2,874	5,633	10,590	6,874	2,488	946	112	22.4
Ac-ft	26,190	23,110	25,550	150,900	159,600	346,400	630,000	422,700	148,100	58,160	6,873	1,331

Calendar year 1956: Max 16,700 Min 5 Mean 2,429 Ac-ft 1,764,000
Water year 1956-57: Max 19,000 Min 18 Mean 2,761 Ac-ft 1,999,000

* Discharge measurement made on this day.

Note.—No gage-height record Apr. 7 to June 8, July 18-24; discharge estimated on basis of records for station below Arghandab Dam.

Arghandab River near Kala Bist, Afghanistan
Discharge, in cubic feet per second, water year October 1957 to September 1958

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	50	300	1,300	2,300	2,000	1,850	734	1,640	690	392	294	343
2	67	280	1,300	2,200	2,000	1,860	1,450	1,470	690	392	287	329
3	100	260	1,300	2,200	2,000	1,840	2,000	1,550	676	392	274	322
4	110	250	1,300	2,200	2,150	1,760	2,400	1,380	632	392	267	329
5	120	213	1,300	2,200	2,150	1,710	2,400	1,060	632	392	274	322
6	130	240	1,300	2,200	2,090	1,670	2,400	866	632	392	267	294
7	150	220	1,790	2,200	2,000	1,600	2,400	883	690	382	267	287
8	178	220	2,630	2,200	2,000	1,490	2,300	883	662	382	267	280
9	185	*220	15,000	2,200	2,000	1,430	2,200	821	647	392	280	280
10	178	240	9,760	2,200	1,970	1,360	2,300	763	632	392	294	267
11	164	230	10,400	2,200	1,970	1,320	2,400	734	618	392	294	254
12	164	240	27,800	2,200	1,910	1,320	2,400	705	618	350	287	248
13	164	250	27,200	2,200	1,880	1,280	2,300	705	589	350	287	234
14	178	260	27,700	2,200	1,880	1,260	2,300	734	574	336	280	215
15	206	260	28,100	2,200	1,880	1,260	2,200	705	550	315	280	203
16	206	250	15,000	*2,150	1,880	1,300	2,100	705	550	308	287	185
17	213	250	7,000	2,090	1,880	1,280	*2,000	705	539	543	287	155
18	220	250	5,000	2,060	1,970	*1,220	2,020	705	520	508	*294	*144
19	220	290	3,500	2,090	2,000	1,100	2,500	1,110	500	*476	294	133
20	220	*785	3,000	2,060	1,970	1,020	2,670	1,160	450	455	287	128
21	220	1,610	2,700	2,060	1,880	966	2,500	982	420	402	287	122
22	220	1,320	2,500	3,060	2,230	866	2,500	*850	380	360	287	116
23	220	1,280	2,400	2,830	2,060	821	2,570	850	350	343	294	111
24	213	1,550	2,400	2,630	2,060	792	2,740	866	*329	322	280	100
25	260	1,760	2,300	2,470	2,030	720	2,440	836	336	315	280	89
26	310	1,730	2,300	2,310	1,910	676	2,120	806	322	315	294	84
27	347	1,460	2,300	2,150	1,850	720	2,050	792	322	315	322	73
28	*365	1,400	2,300	2,090	1,940	763	1,980	778	329	315	382	64
29	329	1,400	2,300	2,030		792	1,950	734	371	315	392	53
30	290	1,300	2,300	1,970		734	1,880	705	392	301	413	48
31	290		2,300	1,970		690		690		301	382	
Total	6,287	20,318	217,780	69,120	55,540	37,470	66,204	28,173	15,642	11,537	9,261	5,812
Mean	203	677	7,025	2,230	1,984	1,209	2,207	909	521	372	299	194
Ac-ft	12,470	40,300	432,000	137,100	110,200	74,320	131,300	55,880	31,030	22,880	18,370	11,530

Calendar year 1957: Max 28,100 Min 18 Mean 3,327 Ac-ft 2,409,000
Water year 1957-58: Max 28,100 Min 48 Mean 1,488 Ac-ft 1,077,000

*Discharge measurement made on this day.
Note.--Doubtful gage-height record Nov. 28 to Dec. 6 and no gage-height record Dec. 16 to Jan. 15, Apr. 3-16, June 18-23; discharge estimated on the basis of records for station below Arghandab Dam.

Arghandab River near Kala Bist, Afghanistan
Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	48	144	336	656	720	2,820	3,520	2,300	960	470	211	144
2	40	185	229	736	672	6,180	3,360	1,970	960	460	155	138
3	*36	203	343	832	656	7,600	4,670	1,590	944	450	122	150
4	32	203	360	896	656	*6,570	8,160	1,320	944	440	90	155
5	27	197	350	880	640	4,890	8,560	1,250	896	640	69	169
6	27	197	360	896	628	4,670	6,960	1,200	880	1,200	56	162
7	20	203	371	896	628	3,800	5,400	1,160	864	1,050	46	155
8	14	209	371	816	617	3,240	4,670	1,060	832	850	35	150
9	15	215	382	704	617	2,400	4,090	960	848	*640	25	144
10	15	222	392	672	656	2,120	3,940	960	816	582	16	169
11	11	254	424	640	736	1,540	4,090	960	848	548	11	169
12	12	274	413	628	1,390	1,830	4,090	928	832	560	*8	169
13	12	280	497	617	2,540	1,320	4,240	928	816	580	6	*169
14	14	280	539	594	2,260	1,010	4,090	928	816	600	4	169
15	14	280	560	594	1,640	864	3,520	960	816	640	3	169
16	15	287	*778	582	1,250	768	2,960	896	816	780	2	162
17	15	287	734	571	1,140	640	3,310	1,160	832	1,100	2	183
18	*10	294	705	606	*960	784	3,240	1,350	848	1,740	21	197
19	10	301	676	672	2,120	3,310	3,520	2,610	864	*1,830	46	190
20	12	315	676	688	2,960	4,090	3,450	2,400	864	571	52	183
21	20	315	683	*640	2,120	4,740	3,380	2,540	832	370	56	183
22	58	315	1,920	582	1,640	5,100	2,890	2,350	864	242	69	190
23	58	322	1,060	582	1,350	4,820	2,820	1,640	848	183	100	197
24	53	322	848	640	2,120	4,600	2,890	1,300	848	133	106	204
25	53	322	800	*1,010	2,400	4,520	2,960	1,160	864	122	100	204
26	53	315	784	832	2,210	4,240	2,890	1,040	848	1,600	100	176
27	44	336	784	768	2,260	4,240	2,610	960	848	928	111	183
28	40	336	800	800	1,830	4,090	*2,540	928	850	672	116	190
29	40	329	736	928		*3,870	2,470	928	540	571	122	197
30	32	336	704	864		3,800	2,470	*1,010	490	433	128	197
31	58		704	784		3,590		980		293	138	
Total	908	8,078	19,619	22,606	39,416	108,056	117,780	41,726	25,128	21,288	2,126	5,217
Mean	29.3	269	633	729	1,408	3,486	3,926	1,346	838	687	68.6	174
Ac-ft	1,800	16,020	38,910	44,840	78,180	214,300	233,600	82,760	49,840	42,230	4,220	10,350

Calendar year 1958: Max 3,060 Min 10 Mean 897 Ac-ft 649,300
Water year 1958-59: Max 8,560 Min 2 Mean 1,129 Ac-ft 817,200

*Discharge measurement made on this day.
Note.—No gage-height record June 28 to July 8, July 12-18, July 30 to Aug. 11; discharge estimated on basis of recorded range in stage, recession curves, and comparison with records for station below Arghandab Dam.

Arghandab River near Kala Bist, Afghanistan
Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	204	*215	502	628	310	86	434	2,960	1,110	9.0	4.0	30
2	211	268	560	606	310	66	360	2,820	1,000	*9.5	4.0	58
3	218	276	640	525	320	52	301	3,030	949	8.5	4.0	58
4	225	330	640	456	310	46	248	3,240	916	7.5	4.0	48
5	225	400	664	422	310	38	203	3,310	866	6.5	4.0	53
6	225	433	656	390	320	33	173	3,170	821	5.5	4.0	58
7	225	433	628	390	310	28	173	2,750	792	5.0	4.0	63
8	234	410	605	390	302	18	173	2,540	778	5.0	4.0	56
9	225	390	582	370	310	7	173	2,470	734	5.0	3.5	44
10	218	390	571	370	310	3	167	2,400	705	5.0	3.0	44
11	204	433	560	360	302	3	161	2,470	662	5.0	3.0	53
12	204	433	560	350	310	3	167	2,360	550	5.0	3.0	*53
13	204	422	548	350	302	4	167	2,360	486	5.0	3.0	48
14	211	400	548	330	310	1,940	167	2,470	424	5.0	3.0	44
15	211	400	560	350	293	2,610	173	2,890	371	5.0	3.0	44
16	218	400	640	340	276	*1,940	155	2,750	329	4.5	3.0	44
17	225	390	688	340	242	1,320	2,920	2,820	294	4.5	3.0	48
18	225	380	720	330	218	1,040	10,800	3,170	260	4.0	3.0	68
19	218	370	816	*330	183	900	4,520	3,520	241	4.0	3.0	53
20	218	370	816	330	176	883	1,500	2,890	228	4.0	3.0	44
21	218	380	*800	320	*176	850	1,550	2,750	209	4.0	3.0	44
22	218	390	784	330	183	778	1,550	2,680	185	4.0	3.0	44
23	218	390	784	320	176	705	1,500	2,360	161	4.0	3.0	44
24	218	390	768	310	169	705	1,500	2,210	133	4.0	3.0	48
25	218	390	800	302	155	574	1,440	*1,830	106	4.0	3.0	40
26	211	390	752	302	133	329	1,590	1,680	89	4.0	3.0	44
27	218	400	736	293	116	329	2,680	1,570	68	4.0	3.0	53
28	218	433	720	293	111	329	2,750	1,410	48	4.0	3.0	53
29	268	444	704	276	95	329	2,820	1,270	30	4.0	3.0	48
30	250	468	688	276		336	3,030	1,230	18	4.0	27	48
31	242		656	293		336		1,160		4.0	30	
Total	6,845	11,618	20,716	11,272	7,038	16,620	43,545	76,540	13,563	156.5	152.5	1,479
Mean	221	387	668	364	243	536	1,452	2,469	452	5.05	4.92	49.3
Ac-ft	13,580	23,040	41,090	22,360	13,960	32,970	86,370	151,820	26,900	310	300	2,930

Calendar year 1959: Max 8,560 Min 2 Mean 1,158 Ac-ft 838,000
Water year 1959-60: Max 10,800 Min 3 Mean 573 Ac-ft 415,600

*Discharge measurement made on this day.

Note.—Doubtful gage-height Apr. 19-23; discharge estimated on basis of partial recorder record and record for station below Arghandam Dam.

HELMAND RIVER BASIN

Helmand River at Darweshan, Afghanistan

Location.—Lat 31°01' N., long 64°05' E., at highway bridge in Darweshan, about 55 kilometers downstream from Arghandab River, about 65 kilometers downstream from Lashkar Gah and about 185 kilometers downstream from Kajakai Dam.

Drainage area.—56,920 sq mi approximately, of which about 7,800 sq mi (above Lake Ab-i-Istada on the Arghastan River and probably parts of the Registan desert) are probably non-contributing.

Records available.—October 1956 to September 1960.

Gage.—Water-stage recorder. Datum of gage is mean sea level (from Morrison-Knudsen Afghanistan surveys based on Survey of India datum.)

Extremes.—Maximum and minimum discharges for water years 1957-1960 are given in the following table:

Water Year	Maximum			Minimum		
	Date	Elevation (meters)	Discharge (cfs)	Date	Elevation (meters)	Discharge (cfs)
1957	Mar. 18, 1957	709.80	133,000	Aug. 21, 1957	703.96	614
1958	Dec. 13, 1957	707.44	46,600	Nov. 16, 1957	704.07	837
1959	Mar. 3, 1959	707.49	47,800	Nov. 18, 1958	704.425	2040
1960	May 19, 1960	706.34	24,000	Mar. 9, 1960	704.36	1580

Remarks.—Records good.

HELMAND RIVER BASIN

Helmand River at Darweshan, Afghanistan
Discharge, in cubic feet per second, water year October 1956 to September 1957

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	7,400	4,540	5,380	7,600	11,600	4,630	20,500	48,500	33,400	11,100	6,510	6,900
2	7,400	4,800	5,380	7,700	11,700	9,500	20,500	50,900	33,600	10,800	6,420	6,800
3	7,400	4,800	5,340	7,700	11,900	9,930	23,500	54,700	33,200	10,700	6,420	6,800
4	7,400	4,800	5,340	7,700	12,300	10,200	43,400	69,000	33,200	10,500	6,330	6,800
5	7,400	4,840	5,300	7,700	12,400	*10,600	67,400	80,600	33,600	10,400	6,330	6,700
6	7,400	4,840	5,250	7,700	12,400	10,600	71,100	80,600	31,600	9,820	6,240	6,600
7	7,400	4,890	5,250	7,800	12,500	10,500	72,000	72,600	29,300	9,600	6,240	6,600
8	7,400	*4,840	5,250	8,000	13,100	10,500	69,900	69,600	29,100	9,300	6,240	7,100
9	7,400	4,890	5,250	8,400	13,400	10,700	67,800	63,800	28,500	9,300	6,240	6,510
10	7,300	4,890	5,250	9,600	12,800	11,000	64,000	58,600	26,200	9,100	6,150	6,560
11	*7,200	4,890	5,250	9,400	12,000	11,000	60,100	57,800	*25,100	8,700	6,060	6,600
12	7,200	4,890	5,250	8,500	11,700	10,800	59,100	58,100	24,200	8,600	6,330	6,600
13	4,600	4,890	5,250	11,600	11,400	10,500	57,800	59,400	23,100	8,500	6,600	6,650
14	2,300	4,940	5,250	*18,500	11,100	10,200	58,600	57,300	21,900	8,400	6,420	6,600
15	*2,100	4,980	5,250	15,900	11,000	10,600	63,500	54,200	20,600	8,200	2,590	6,560
16	1,800	5,020	5,250	10,600	10,900	10,600	68,100	50,600	19,900	8,000	1,220	6,560
17	1,700	5,020	5,250	9,600	10,900	10,800	69,600	47,500	19,100	7,700	950	6,650
18	1,700	5,070	5,250	9,300	10,800	66,600	66,000	46,300	18,400	7,600	975	6,700
19	1,700	5,160	5,300	9,710	10,700	53,800	64,900	45,200	17,600	7,400	879	6,800
20	1,200	5,160	5,340	9,820	10,700	42,500	60,100	44,100	16,900	7,300	816	6,700
21	1,200	5,070	5,340	9,930	10,800	36,000	59,400	43,400	16,200	7,200	774	6,700
22	1,100	5,160	*5,300	9,930	10,700	30,400	58,100	43,000	15,700	7,200	5,970	6,700
23	*1,000	5,250	5,660	10,000	10,700	*28,100	57,000	42,300	15,100	7,100	6,240	6,700
24	1,000	5,250	6,060	10,700	10,600	23,000	56,000	42,100	14,300	6,900	6,240	6,700
25	1,000	5,300	5,970	13,700	10,400	22,600	55,700	41,200	13,800	7,000	6,330	6,700
26	1,000	5,340	5,970	22,100	9,300	21,000	53,300	39,200	13,500	7,000	6,420	6,800
27	900	5,340	5,970	17,600	5,160	20,000	51,800	36,200	12,800	*7,100	6,510	6,700
28	900	5,340	5,880	16,000	4,380	21,000	51,600	34,400	11,400	7,000	6,510	6,750
29	858	5,340	6,060	13,800	-	23,300	50,400	33,600	10,900	6,900	6,510	6,750
30	1,270	5,380	7,000	12,600	-	23,700	47,000	32,400	10,700	6,700	6,560	6,750
31	4,120	-	7,400	12,000	-	22,600	-	32,400	-	6,600	6,700	-
Total	119,748	150,920	172,240	341,190	307,340	607,260	1,688,200	1,589,600	652,900	257,720	160,724	201,040
Mean	3,863	5,031	5,556	11,010	10,980	9,590	56,270	51,280	21,760	8,314	5,185	6,701
Ac-ft	237,500	299,300	341,600	676,700	609,600	1,204,000	3,348,000	3,153,000	1,295,000	511,200	318,800	398,800

Calendar year 1956: Max - Min - Mean - Ac-ft -
Water year 1956-57: Max 80,600 Min 774 Mean 17,070 Ac-ft 12,390,000

* Discharge measurement made on this day.
Note.—No gage-heights Oct. 1-27; discharge estimated on basis of records at Chahar Burjak.

Helmand River at Darweshan, Afghanistan
Discharge, in cubic feet per second, water year October 1957 to September 1958

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	6,800	6,600	5,880	10,200	9,500	8,200	7,400	23,000	9,500	6,700	6,100	6,460
2	6,700	6,700	5,700	10,200	10,000	8,100	7,800	21,800	9,400	6,700	6,060	6,380
3	6,750	6,700	5,610	10,000	11,000	8,200	8,500	20,800	9,500	6,700	6,020	6,240
4	6,950	6,700	5,610	9,930	10,300	8,100	8,700	19,800	8,800	6,700	5,920	6,060
5	7,000	6,600	5,610	9,820	9,930	8,000	8,700	18,800	8,300	6,800	5,920	5,880
6	7,000	6,700	5,790	9,710	9,710	8,000	8,600	17,600	8,400	6,950	5,970	5,790
7	6,850	6,330	8,000	9,710	9,500	7,900	8,500	17,000	8,400	6,750	5,970	5,520
8	*6,800	2,280	10,400	9,710	9,400	7,800	8,400	16,400	8,150	6,600	5,970	5,520
9	6,900	1,320	18,000	9,710	9,300	7,700	8,400	15,700	7,950	5,840	5,970	5,790
10	6,850	*1,100	17,600	9,820	9,200	7,700	8,200	15,000	7,750	3,010	5,970	5,700
11	7,100	1,000	21,000	10,200	9,000	7,700	8,300	14,400	7,750	3,980	6,060	5,700
12	7,500	938	*34,100	10,200	8,900	7,700	*8,400	14,200	7,500	6,280	6,060	5,700
13	7,000	900	34,200	10,000	8,800	7,700	8,400	13,600	7,250	6,380	6,020	5,920
14	6,420	879	19,100	9,820	8,800	7,700	8,400	13,300	7,200	6,420	5,920	6,150
15	6,600	858	14,000	9,820	8,900	7,700	8,300	12,600	7,050	6,240	*5,880	5,920
16	6,600	837	12,400	9,820	8,600	7,600	8,400	12,800	7,050	6,280	5,880	6,420
17	6,700	1,480	11,800	9,820	8,600	7,600	10,200	12,900	7,000	6,420	5,880	6,100
18	6,900	3,630	11,400	9,710	8,500	7,500	12,300	12,600	7,000	6,560	5,880	5,520
19	6,700	4,120	11,000	*9,710	8,400	*7,300	14,000	12,600	7,100	6,510	5,880	5,520
20	6,560	7,700	10,800	9,820	8,400	7,200	15,600	12,300	7,050	6,600	5,880	5,480
21	6,700	10,200	10,700	9,820	8,400	7,100	16,600	11,900	7,000	6,800	5,840	5,480
22	6,700	7,700	10,500	10,200	8,500	7,100	18,500	11,400	7,000	6,510	5,790	5,480
23	6,650	6,700	10,700	10,400	8,400	7,000	19,700	10,900	6,800	6,240	5,790	5,520
24	6,700	6,700	10,600	10,200	*8,200	6,950	20,500	*11,400	6,600	6,150	5,790	5,520
25	6,700	7,700	10,500	10,000	8,000	6,850	21,100	11,200	6,600	6,150	5,880	5,380
26	6,420	7,900	10,400	9,930	8,000	6,800	21,900	11,000	6,600	6,150	5,880	5,340
27	6,700	6,900	10,300	9,820	8,000	6,900	23,100	10,800	6,510	6,100	5,920	5,480
28	6,850	6,330	10,200	9,820	8,000	7,000	24,000	10,600	6,600	6,060	6,150	5,520
29	6,800	6,060	10,200	9,710	-	7,300	24,400	10,300	6,600	6,150	6,200	5,520
30	6,700	5,970	10,300	9,500	-	7,600	23,700	10,000	6,650	6,150	6,240	5,560
31	6,600	-	10,200	9,400	-	7,300	-	9,710	-	6,150	6,460	-
Total	210,200	145,532	382,600	306,530	250,240	233,300	399,000	436,410	225,060	193,030	185,150	172,520
Mean	6,781	4,851	12,340	9,888	8,937	7,526	13,270	14,080	7,502	6,227	5,973	5,751
Ac-ft	416,900	288,700	758,900	608,000	496,300	462,700	791,400	865,600	446,400	382,900	367,200	342,200

Calendar year 1957: Max 80,600 Min 774 Mean 17,930 Ac-ft 12,980,000
Water year 1957-58: Max 34,200 Min 837 Mean 8,602 Ac-ft 6,227,000

*Discharge measurement made on this day.
Note.--Gage read once daily January 7-18, March 3-17.

HELMAND RIVER BASIN

Helmand River at Darweshan, Afghanistan
Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	5,520	5,160	3,040	3,920	4,580	5,120	11,500	19,000	9,900	6,600	5,570	5,080
2	5,520	5,160	3,120	4,000	4,490	18,600	11,200	18,500	9,580	6,500	5,390	5,030
3	5,520	5,160	3,150	4,080	4,490	*27,170	12,100	17,800	9,360	6,500	5,340	4,980
4	5,560	5,160	3,150	4,240	4,400	15,500	15,000	16,900	9,140	6,400	5,300	4,980
5	5,560	5,160	3,150	4,400	4,440	12,100	16,300	16,300	8,920	6,300	5,210	4,980
6	5,520	5,160	3,190	4,580	4,080	10,900	14,500	16,000	8,920	6,400	5,160	4,980
7	5,480	5,120	3,230	4,580	4,000	9,960	13,300	15,600	8,700	6,900	5,120	4,980
8	5,480	5,120	3,190	4,670	3,880	9,300	12,400	15,300	8,360	6,700	5,030	4,900
9	5,480	5,120	3,190	4,440	3,920	8,420	11,700	14,900	8,150	6,400	5,080	4,360
10	5,430	5,120	3,230	4,400	4,080	9,190	11,500	14,300	*8,050	6,300	5,260	4,280
11	5,430	5,120	3,270	4,320	4,160	11,600	11,400	14,100	7,700	6,200	5,750	4,280
12	5,430	5,120	3,550	4,320	4,400	9,960	11,400	13,700	7,400	*6,200	5,570	4,280
13	5,430	4,630	5,250	4,320	5,210	8,970	11,500	13,300	7,200	6,200	5,030	4,280
14	5,480	3,080	4,540	4,240	5,120	8,000	11,600	13,000	7,000	6,110	5,030	4,280
15	5,520	2,840	*4,200	4,320	4,670	7,300	11,000	12,800	6,900	6,020	*4,940	4,320
16	5,480	2,730	4,000	4,320	4,400	6,800	10,600	12,800	7,000	5,930	5,030	4,670
17	5,520	2,590	3,870	4,320	4,160	6,400	11,700	12,850	6,900	5,840	5,030	4,670
18	5,430	2,620	3,790	4,580	5,040	6,020	14,600	14,000	7,000	5,750	4,940	4,670
19	5,340	2,800	3,790	4,580	8,200	7,800	17,400	14,150	7,000	6,300	4,940	4,620
20	4,980	2,800	3,870	4,580	5,660	8,750	19,700	14,950	7,000	6,400	4,940	4,120
21	3,710	2,870	4,420	4,490	5,120	9,300	*21,100	14,950	6,900	5,880	5,030	4,120
22	*4,800	2,800	4,670	4,400	4,760	9,740	22,800	14,250	6,800	5,800	4,940	4,160
23	5,430	2,840	4,400	4,400	4,580	9,740	23,800	13,500	6,800	5,840	4,940	4,240
24	5,480	2,800	3,920	4,490	4,940	9,740	24,700	12,850	6,800	5,750	4,940	4,120
25	5,520	2,840	3,760	*5,030	5,750	9,630	24,700	12,550	7,000	5,750	4,940	3,880
26	5,480	2,800	3,680	4,850	5,390	9,410	24,000	12,050	7,200	6,400	4,900	3,960
27	5,430	2,870	3,680	4,850	5,120	9,300	22,800	11,550	6,900	7,200	4,900	3,960
28	5,070	3,080	4,160	4,760	5,120	9,960	21,300	11,150	6,900	6,250	4,900	3,920
29	5,430	3,120	4,160	4,850	-	11,700	20,300	10,850	6,800	5,840	4,940	4,000
30	5,160	3,120	4,080	4,720	-	12,400	19,600	10,550	6,700	5,660	4,980	*3,520
31	5,160	-	4,000	4,620	-	12,000	-	10,250	-	5,570	5,030	-
Total	165,780	114,910	116,700	138,670	134,160	320,780	485,500	434,750	228,980	191,890	158,100	132,620
Mean	5,348	3,830	3,765	4,473	4,791	10,350	16,180	14,020	7,633	6,190	5,100	4,421
Ac-ft	328,800	227,900	231,500	275,000	266,100	636,300	963,000	862,300	454,200	380,600	313,600	263,000

Calendar year 1958: Max 34,200 Min 2,590 Mean 7,667 Ac-ft 5,550,000
Water year 1958-59: Max 27,170 Min 2,590 Mean 7,186 Ac-ft 5,202,000

*Discharge measurement made on this day.

Helmand River at Darweshan, Afghanistan
Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3,520	3,160	3,120	6,200	4,000	2,250	3,800	6,950	14,200	4,200	2,060	2,120
2	3,600	3,160	3,440	6,800	4,000	2,250	3,840	6,650	13,600	4,040	2,060	2,120
3	3,360	3,200	8,480	6,800	3,960	2,190	3,600	6,650	13,100	3,800	2,040	2,090
4	3,280	3,240	5,120	6,600	*3,870	2,140	3,560	7,100	12,600	3,560	2,040	2,020
5	3,240	3,400	4,240	6,500	3,520	1,940	3,680	7,150	12,400	3,400	2,040	2,020
6	3,200	3,480	4,080	6,400	3,560	2,090	3,520	7,050	12,000	3,360	2,040	2,020
7	3,200	3,440	3,840	6,440	3,680	2,060	3,280	6,650	11,600	*3,280	2,040	2,340
8	3,200	3,440	3,760	6,300	3,560	2,020	3,120	6,250	11,400	3,120	2,020	2,400
9	3,160	3,440	3,680	6,200	3,560	1,820	3,040	6,160	11,200	3,040	1,990	2,370
10	3,120	3,320	3,640	6,160	3,520	2,040	3,000	7,800	10,900	2,920	1,960	2,370
11	3,120	2,960	3,840	4,800	3,360	2,250	2,960	10,100	10,600	2,770	1,960	*2,370
12	3,120	*2,880	5,840	4,440	3,200	2,370	2,880	12,400	10,300	2,680	1,940	2,250
13	3,120	2,840	5,980	4,440	3,120	*2,930	2,880	14,400	9,900	2,620	1,940	2,250
14	3,120	2,800	5,980	4,360	3,040	*6,110	3,040	16,300	9,360	2,560	1,940	2,250
15	3,120	2,770	6,200	4,280	2,960	7,500	3,600	*18,200	8,800	2,500	1,900	2,250
16	3,120	2,770	6,400	4,280	2,800	6,300	4,400	19,700	8,200	2,400	1,900	2,310
17	3,040	2,770	6,500	4,280	2,620	5,120	12,200	21,000	8,000	2,250	1,920	2,310
18	3,000	2,770	6,450	4,280	2,560	4,490	20,200	22,300	7,600	2,220	1,920	2,250
19	3,040	2,740	6,500	4,280	2,460	4,160	17,400	23,500	7,000	2,190	1,940	2,310
20	3,040	2,740	6,450	4,120	2,500	3,960	12,500	23,700	6,600	2,190	1,990	2,280
21	2,960	2,740	6,400	4,160	2,500	4,320	*9,900	23,300	6,250	2,190	2,020	2,280
22	2,960	2,740	6,350	4,160	2,500	3,480	10,400	23,000	5,980	2,250	1,960	2,280
23	3,000	2,740	6,350	4,160	2,460	3,280	9,680	22,300	5,700	2,310	1,940	2,310
24	3,040	2,740	*6,250	4,160	2,430	3,200	9,240	21,300	5,480	2,310	2,140	2,310
25	3,040	2,740	6,200	4,080	2,430	3,040	7,200	20,000	5,260	2,280	2,160	2,310
26	3,040	2,770	6,200	4,000	2,370	3,080	6,700	18,900	5,080	2,340	2,160	2,370
27	3,000	2,960	6,200	4,000	2,370	3,320	7,900	17,900	4,800	2,340	2,160	2,400
28	3,040	3,040	6,110	4,000	2,370	4,800	7,650	17,000	4,620	2,220	2,140	2,370
29	3,080	3,080	6,110	4,000	2,310	4,800	7,650	16,000	4,400	2,120	2,140	2,400
30	3,120	3,160	6,110	4,000	-	4,160	7,450	15,500	4,360	2,060	2,160	2,500
31	3,160	-	6,110	4,000	-	3,920	-	14,700	-	2,090	2,220	-
Total	97,160	90,030	171,930	152,640	87,590	107,390	200,270	459,910	261,290	83,610	62,840	68,230
Mean	3,134	3,001	5,546	4,924	3,020	3,464	6,676	14,840	8,710	2,697	2,027	2,274
Ac-ft	192,700	178,600	341,000	302,800	173,700	213,000	397,200	912,200	518,300	165,800	124,600	135,300

Calendar year 1959: Max 27,170 Min 2,740 Mean 7,081 Ac-ft 5,126,000
Water year 1959-60: Max 23,700 Min 1,820 Mean 5,035 Ac-ft 3,655,000

*Discharge measurement made on this day.

HELMAND RIVER BASIN

Helmand River at Chahar Burjak, Afghanistan

Location.— Lat 30° 15' N., long 62° 00' E., on right bank 1¼ kilometers downstream from Chahar Burjak, about 80 kilometers from Rud-i-Seistan and Iran boundary, and about 320 kilometers downstream from Arghandab River.
Drainage area.— 72,100 sq mi, approximately (23,000 sq mi considered noncontributing).
Records available.— October 1946 to September 1960 (monthly discharge only October 1946 to September 1948, October 1951 to April 1952, July to September 1952, February, March 1954).
Gage.— Water-stage recorder. Altitude of gage 500 meters, approximately.
Average discharge.— 14 years 7,157 cfs (adjusted for storage) 5,181,000 acre-ft per year.
Extremes.— Maximum and minimum discharges for the water years 1949-60 are given in the following table:

Water Year	Maximum			Minimum		
	Date	Gage Height (meters)	Discharge (cfs)*	Date	Gage Height (meters)	Discharge (cfs)
1949	Mar. 15, 1949	a12.23	80,000	Oct. 1, 1948	—	b510
1950	Feb. 2, 1950	a11.30	57,300	Oct. 1,2,7-9,1949	—	760
1951	May 12, 1951	—	b56,000	Oct. 1, 1950	—	b880
1952	—	—	(c)	—	—	(c)
1953	Feb. 18, 1953	—	b10,000	Oct. 1-8, 1952	—	b1,000
1954	—	—	(c)	Dec. 11, 1953	—	b740
1955	Mar. 18, 1955	10.02	30,400	Dec. 13, 1954	—	b700
1956	Apr. 10, 1956	11.25	57,200	Oct. 5, 1955	7.565	2,420
1957	(d)	a12.98	117,000	Aug. 24, 25, 1957	—	b1,000
1958	Dec. 14, 1957	10.20	31,900	Nov. 20, 1957	7.10	812
1959	Mar. 4, 1959	9.31	32,300	Nov. 20, 1958	7.535	2,820
1960	May 20, 1960	9.55	25,400	Aug. 7-9, 1960	7.23	1,660

* From rating curve extended above 30,000 cfs on basis of velocity-area studies.
a From floodmarks.
b Mean daily discharge.
c Not determined.
d May have occurred on Mar. 21 or Apr. 7 or May 7, 1957.

A discharge of 91,500 cfs in 1903 and a discharge in excess of 600,000 cfs in 1885 were computed by slope-area method in the lower Helmand River by a British river commission in 1903-5.

Remarks.— Records good except those for water years 1950, 1952, which are fair, and those for periods of no gage-height record, which are poor. Discharge regulated by Kajakai Reservoir on Helmand River and Arghandab Reservoir on Arghandab River, also by extensive irrigation throughout the river basin.

Helmand River at Chahar Burjak, Afghanistan
Monthly discharge, water year October 1946 to September 1947

Month	Mean, cubic feet per second	Runoff in ac-ft
October	610	37,500
November	840	50,000
December	1,160	71,300
Calendar year		
January	1,500	92,000
February	3,500	194,000
March	6,800	418,000
April	8,900	530,000
May	5,210	320,000
June	1,570	93,300
July	250	15,400
August	5	300
September	25	1,500
Water year 1946-47	2,520	1,823,300

Note.— Discharge estimated on basis of streamflow data collected at upstream sites.

Monthly discharge, water year October 1947 to September 1948

Month	Mean, cubic feet per second	Runoff in ac-ft
October	410	25,200
November	680	40,500
December	1,010	62,000
Calendar year 1947	2,480	1,792,200
January	1,300	80,000
February	2,700	150,000
March	11,800	725,000
April	24,500	1,458,000
May	13,600	835,000
June	3,620	216,000
July	900	55,300
August	500	30,800
September	400	23,800
Water year 1947-48	5,110	3,701,600

Note.— Discharge estimated on basis of streamflow data collected at upstream sites.

Helmand River at Chahar Burjak, Afghanistan
Discharge, in cubic feet per second, water year October 1948 to September 1949

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	510	780	1,100	1,500	2,180	4,910	15,000	28,860	8,390	2,960	1,060	760
2	520	790	1,100	1,600	2,130	4,450	18,000	27,920	8,040	2,850	1,040	760
3	520	800	1,100	1,500	2,180	3,960	24,000	27,020	7,780	2,740	1,040	744
4	530	810	1,100	1,400	6,400	3,760	22,000	26,120	7,530	2,630	1,040	728
5	540	820	1,100	1,550	10,300	3,690	27,000	25,220	7,280	2,530	1,040	712
6	540	830	1,100	1,700	7,700	3,560	31,000	24,330	7,040	2,420	1,040	712
7	550	840	1,100	*1,800	6,440	3,440	30,000	23,480	6,800	2,320	994	696
8	550	850	1,100	1,700	5,650	3,560	32,000	22,630	6,560	2,220	928	712
9	560	860	1,100	1,600	5,320	3,690	32,000	21,780	6,340	2,120	928	696
10	560	870	1,100	1,600	4,760	3,820	32,000	20,940	6,110	2,080	906	696
11	570	880	1,100	1,550	4,170	3,960	31,000	20,140	5,880	2,040	884	696
12	580	890	1,100	1,550	3,690	6,710	32,000	19,390	5,660	1,990	928	712
13	580	900	1,150	1,500	3,500	28,670	32,000	18,590	5,450	1,940	1,350	712
14	590	920	1,150	*1,440	3,440	42,530	45,000	17,750	5,230	1,900	1,320	712
15	600	930	1,150	1,250	3,320	80,000	74,600	17,000	5,020	1,860	1,230	728
16	600	950	1,200	1,290	3,260	70,000	70,600	16,260	4,820	1,810	1,090	728
17	610	970	1,200	1,320	3,260	50,000	55,000	15,560	4,680	1,760	994	696
18	620	990	1,200	1,290	3,320	30,000	46,000	14,820	4,550	1,720	906	696
19	630	1,000	1,200	1,400	3,200	20,000	44,000	14,220	4,420	1,680	840	712
20	640	1,000	1,200	1,470	3,140	14,000	41,000	13,580	4,290	1,650	808	680
21	650	1,000	1,200	1,470	3,080	12,000	38,000	12,980	4,160	1,570	808	728
22	660	1,000	1,200	1,550	3,080	11,500	36,000	12,380	4,030	1,540	792	744
23	670	1,000	1,200	1,620	3,020	11,000	35,000	11,780	3,900	1,500	792	728
24	680	1,000	1,200	*1,620	*3,020	11,500	34,000	11,190	3,780	*1,460	760	*728
25	700	*1,000	1,200	1,700	3,080	11,500	34,000	10,640	3,660	1,320	760	744
26	710	1,050	1,200	1,790	3,440	11,500	34,000	10,100	3,540	1,290	766	712
27	720	1,050	1,200	1,910	5,060	12,000	36,000	10,640	3,420	1,230	776	728
28	730	1,050	1,200	1,960	5,480	13,000	40,000	10,100	3,300	1,180	776	776
29	740	1,050	1,250	2,220	-	16,000	*30,810	9,610	3,180	1,150	760	776
30	760	1,050	1,300	2,270	-	15,000	29,810	9,130	3,070	1,120	760	760
31	770	-	1,400	2,180	-	15,000	-	8,760	-	1,040	744	-
Total	19,190	27,930	36,200	50,300	116,620	526,010	1,081,820	532,870	157,910	57,620	28,854	21,712
Mean	619	931	1,168	1,623	4,165	16,970	36,060	17,190	5,264	1,859	931	724
Ac-ft	38,060	55,400	71,800	99,770	231,300	1,043,000	2,146,000	1,057,000	313,200	114,300	57,230	43,060

Calendar year 1948: Max - Min - Mean - Ac-ft ---
Water year 1948-49: Max 80,000 Min 510 Mean 7,280 Ac-ft 5,270,000

* Discharge measurement made on this day.

Note.— No gage-height record Oct. 1 to Jan. 13, Mar. 15 to Apr. 14, Apr. 16-28, Apr. 29 to July 23; discharge estimated on basis of estimated gage heights during recession, discharge measurements, floodmark stages Mar. 15 and Apr. 15, and records for stations upstream.

Helmand River at Chahar Burjak, Afghanistan
Discharge, in cubic feet per second, water year October 1949 to September 1950

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	760	950	1,180	1,320	21,100	4,700	9,800	18,060	20,000	4,600	1,580	880
2	760	972	1,230	1,290	55,000	5,000	10,000	19,820	19,500	4,400	1,580	880
3	776	994	1,320	1,320	28,290	5,400	11,000	21,610	18,500	4,200	1,510	860
4	792	994	1,320	1,350	6,640	5,800	14,000	22,800	18,000	4,000	1,470	840
5	808	1,020	1,320	1,420	5,520	6,400	28,000	23,990	17,000	3,800	1,440	820
6	776	1,020	1,290	1,460	5,000	6,800	40,000	24,330	16,000	3,600	1,400	800
7	760	1,020	1,320	1,420	5,160	7,000	28,000	25,040	15,500	3,400	1,360	800
8	760	1,040	1,290	1,420	5,020	7,000	22,000	27,020	14,500	3,200	1,360	800
9	760	1,040	1,260	1,350	5,020	6,500	19,000	28,480	14,000	3,100	1,320	800
10	776	1,040	1,230	1,290	6,340	6,300	17,000	31,000	13,500	3,000	1,290	800
11	840	1,060	1,260	1,260	6,600	6,200	16,000	35,000	13,000	2,900	1,220	800
12	840	1,060	1,260	1,260	7,000	6,400	16,000	33,000	12,000	*2,760	1,190	800
13	840	1,060	1,290	1,290	6,800	6,900	16,000	31,000	11,500	2,760	1,130	800
14	884	1,120	1,390	1,390	6,000	7,700	18,000	34,000	11,000	2,710	1,100	780
15	884	1,150	1,420	1,500	5,300	9,500	20,000	39,000	10,500	2,600	1,080	780
16	884	1,150	1,500	1,540	5,000	11,500	23,000	41,480	9,800	2,500	1,050	780
17	884	1,180	1,500	1,570	4,800	10,500	26,000	39,000	9,400	2,410	989	800
18	862	1,090	1,460	1,610	4,700	9,500	30,000	37,000	9,000	2,320	960	800
19	884	1,090	1,420	1,610	4,600	9,000	27,000	36,000	8,500	2,320	960	800
20	840	1,090	1,420	1,570	4,500	8,600	24,000	35,000	8,000	2,270	989	800
21	862	1,090	1,460	1,540	4,400	8,400	*20,300	36,000	7,600	2,220	989	800
22	840	1,090	1,420	1,570	4,300	8,400	19,820	35,000	7,200	2,130	989	800
23	840	1,120	1,390	1,570	4,300	8,600	18,700	34,000	6,800	2,040	989	800
24	862	1,120	1,390	1,610	4,300	11,000	17,450	32,000	6,500	2,040	960	800
25	884	1,120	1,350	1,540	4,300	13,000	17,000	30,000	6,200	1,960	960	800
26	884	1,150	1,390	1,570	4,300	17,000	16,120	28,000	5,800	1,910	960	800
27	906	1,180	1,460	1,610	4,400	14,000	15,560	26,000	5,500	1,910	960	800
28	906	1,230	1,420	1,500	4,500	12,000	15,140	25,000	5,200	1,870	940	820
29	994	1,200	1,390	1,540	-	11,000	15,420	23,000	5,000	1,830	940	820
30	950	1,200	1,390	1,570	-	10,000	16,260	22,000	4,800	1,750	920	840
31	928	-	1,350	1,610	-	9,800	-	21,000	-	1,700	900	-
Total	26,226	32,640	42,090	45,470	233,490	269,900	586,570	914,630	329,800	84,210	35,485	24,300
Mean	846	1,088	1,358	1,467	8,339	8,706	19,550	29,500	10,990	2,716	1,145	810
Ac-ft	52,020	64,740	83,480	90,190	463,100	535,300	1,163,000	1,814,000	654,100	167,000	70,380	48,200

Calendar year 1949: Max 80,000 Min 680 Mean 7,328 Ac-ft 5,305,000
Water year 1949-50: Max 55,000 Min 760 Mean 7,191 Ac-ft 5,206,000

* Discharge measurement made on this day.
Note.— No gage-height record Jan. 20 to Apr. 20, May 10-15, May 17 to July 12, Sept. 27-30; discharge estimated on basis of upstream records, discharge measurements, station watchman's information, and floodmark.

Helmand River at Chahar Burjak, Afghanistan
Discharge, in cubic feet per second, water year October 1950 to September 1951

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	880	1,300	1,470	1,420	1,690	3,000	25,000	29,100	24,000	6,000	1,900	1,100
2	900	1,300	1,500	1,420	1,750	3,100	21,000	30,400	24,000	5,600	1,800	1,100
3	900	1,300	1,550	1,420	1,750	3,300	19,000	31,500	23,000	5,400	1,700	1,100
4	920	1,300	1,580	1,440	1,750	3,500	18,000	32,400	22,000	5,200	1,700	1,100
5	920	*1,320	1,580	1,440	1,750	3,700	18,000	32,900	21,000	5,000	1,600	1,100
6	920	1,340	1,580	1,470	1,880	4,000	18,000	32,500	20,000	4,800	1,600	1,100
7	940	1,370	1,580	1,470	3,070	4,500	17,000	31,500	19,000	4,600	1,600	1,100
8	960	1,370	1,550	1,500	2,700	5,000	17,000	31,500	18,000	4,400	1,500	1,100
9	960	1,370	1,500	1,500	2,410	5,500	16,000	33,500	17,000	4,300	1,500	1,100
10	1,000	1,340	1,470	1,520	2,550	6,000	15,000	40,000	16,000	4,200	1,500	1,100
11	1,050	1,370	1,470	1,520	4,670	7,000	15,000	50,000	15,000	4,000	1,400	1,100
12	1,050	1,370	1,470	1,520	3,500	9,000	15,000	56,000	14,000	3,800	1,400	1,100
13	1,100	1,370	1,470	1,550	3,000	10,000	17,000	50,000	13,000	3,600	1,300	1,100
14	1,100	1,390	1,500	1,600	2,700	11,000	20,000	45,000	13,000	3,500	1,300	1,100
15	1,100	1,420	1,520	1,650	2,500	10,000	24,000	40,000	12,000	3,300	1,300	1,100
16	1,150	1,390	1,520	1,650	2,400	8,600	26,000	36,000	11,000	3,200	1,250	1,100
17	1,150	1,370	1,550	1,700	2,400	8,000	27,000	37,000	11,000	3,100	1,200	1,100
18	1,150	1,370	1,520	1,700	2,500	8,400	27,000	32,200	10,500	2,900	1,200	1,100
19	1,150	1,370	1,500	1,700	2,400	12,000	27,000	30,400	10,000	2,800	1,200	1,100
20	1,150	1,370	1,470	1,650	2,400	14,000	27,000	29,600	10,000	2,700	1,150	1,100
21	1,180	1,370	1,470	1,640	2,400	13,700	28,000	29,200	9,600	2,600	1,150	1,100
22	1,200	1,370	1,440	1,640	2,500	13,000	29,000	29,100	9,000	2,500	1,150	1,100
23	1,220	1,390	1,440	1,660	2,700	12,200	28,000	29,100	8,600	2,400	1,150	1,100
24	1,240	1,390	1,440	1,660	3,000	11,400	27,000	28,800	8,000	2,400	1,150	1,100
25	1,250	1,420	1,440	*1,660	2,700	11,000	27,000	28,400	7,500	2,300	1,150	1,100
26	1,260	1,440	1,440	1,660	2,600	11,500	29,000	27,800	7,200	2,200	1,100	1,100
27	1,260	1,440	1,470	1,640	2,700	12,700	28,200	27,200	7,000	2,200	1,100	1,100
28	1,270	1,470	1,440	1,640	2,800	14,000	27,600	26,600	6,800	2,100	1,100	1,100
29	1,300	1,500	1,440	1,660	-	18,000	27,200	25,800	6,600	2,100	1,100	1,100
30	1,300	1,500	1,440	1,690	-	27,000	28,100	25,200	6,400	2,000	1,100	1,100
31	1,300	-	1,420	1,660	-	29,000	-	24,500	-	1,900	1,100	-
Total	34,230	41,390	46,230	49,050	71,170	313,100	688,100	1,033,200	400,200	107,100	41,450	33,000
Mean	1,104	1,380	1,491	1,582	2,542	10,100	22,940	33,330	13,340	3,455	1,337	1,100
Ac-ft	67,890	82,100	91,700	97,290	141,200	621,000	1,365,000	2,049,000	793,800	212,400	82,210	65,450

Calendar year 1950: Max 55,000 Min 780 Mean 7,249 Ac-ft 5,247,000
Water year 1950-51: Max 56,000 Min 880 Mean 7,831 Ac-ft 5,669,000

* Discharge measurement made on this day.

Note.— No gage-height record Oct. 1-31, Jan. 5-24, Feb. 12 to Apr. 26, May 10-17, May 31 to Sept. 30; discharge estimated on basis of upstream records at Kajakai Dam and Arghandab River near Kala Bist and discharge measurements.

Helmand River at Chahar Burjak, Afghanistan
Discharge, in cubic feet per second, water year October 1951 to September 1952

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,120	1,450	1,660	2,050	4,630	11,400	21,800	22,000	9,430	1,970	962	925
2								22,000	9,100			
3								21,000	8,770			
4								20,000	8,440			
5								21,000	8,020			
6								22,000	7,920			
7								23,000	7,820			
8								22,000	7,620			
9								21,000	7,510			
10								20,000	7,310			
11								19,000	7,220			
12								18,000	7,100			
13								17,000	6,800			
14								16,000	6,200			
15								15,000	5,700			
16								14,500	5,400			
17								14,000	5,100			
18								13,500	4.900			
19								13,000	4,700			
20								12,400	4,600			
21								12,000	4,400			
22								11,600	4,300			
23								11,500	4,100			
24								11,200	4,000			
25								10,800	3,900			
26								10,600	3,800			
27								10,500	3,700			
28								10,200	3,500			
29								9,780	3,400			
30								9,660	3,300			
31	1,120	1,450	1,660	2,050	4,630	11,400	21,800	9,660	-	1,970	962	925
Total	34,720	43,500	51,460	63,550	134,270	353,400	654,000	483,900	178,060	61,070	29,822	27,750
Mean	1,120	1,450	1,660	2,050	4,630	11,400	21,800	15,610	5,935	1,970	962	925
Ac-ft	69,000	86,000	102,000	126,000	257,000	701,000	1,297,000	959,800	353,200	121,000	59,000	55,000

Calendar year 1951: Max - Min - Mean 7,852 Ac-ft 5,684,000
Water year 1951-52: Max - Min - Mean 5,766 Ac-ft 4,186,000

Note.-- No gage-height record Oct. 1 to May 19, June 12 to Sept. 30; discharge for May 1-19, June 12-30 estimated on basis of upstream records; monthly discharge for remainder of year computed on basis of upstream records and discharge ratios for other years.

Helmand River at Chahar Burjak, Afghanistan
Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,000	1,300	1,450	1,600	2,670	3,030	2,970	5,260	5,560	5,180	4,680	4,480
2	1,000	1,350	1,450	1,600	2,620	3,900	3,900	5,040	5,980	5,180	4,740	4,540
3	1,000	1,350	1,450	1,650	2,250	3,960	4,020	5,040	6,060	5,080	4,680	4,540
4	1,000	1,350	1,450	1,650	2,170	3,840	4,140	5,110	5,890	5,080	4,740	4,510
5	1,000	1,350	1,450	1,700	2,120	3,590	4,080	5,180	6,140	5,080	4,610	4,410
6	1,000	1,350	1,450	1,700	2,120	3,530	4,080	5,110	5,810	4,140	4,580	4,340
7	1,000	1,350	1,450	1,700	2,120	3,530	4,210	5,180	5,730	2,970	4,610	4,410
8	1,000	1,350	1,450	1,700	2,120	3,530	4,210	5,180	5,640	2,620	4,610	4,410
9	1,050	1,350	1,500	1,700	2,170	3,530	4,410	5,260	5,640	2,870	4,540	4,480
10	1,050	1,350	1,500	1,650	2,300	3,420	4,210	5,110	5,730	4,480	4,580	4,540
11	1,050	1,350	1,500	1,650	2,340	3,530	4,270	5,110	*5,730	4,740	4,680	4,610
12	1,050	1,350	1,500	1,600	2,470	3,770	4,210	5,180	5,730	4,810	*4,710	4,440
13	1,100	1,350	1,500	1,600	4,530	3,840	4,410	5,260	5,640	4,840	4,610	4,340
14	1,100	1,350	1,500	1,600	9,900	3,770	4,740	5,110	5,640	4,740	4,610	4,340
15	1,100	1,350	1,500	1,600	7,210	3,710	5,320	5,180	5,640	4,880	4,680	4,340
16	1,100	1,350	1,500	1,700	6,800	3,710	7,410	5,260	5,560	4,880	4,610	4,340
17	1,100	1,350	1,500	1,900	7,600	3,710	5,980	5,260	5,520	4,840	4,540	4,410
18	1,100	1,350	1,500	2,200	10,000	3,710	5,560	5,260	5,410	4,920	4,610	4,020
19	1,100	1,350	1,550	2,400	8,000	3,710	5,410	5,180	5,340	5,000	4,480	3,250
20	1,100	1,400	1,550	2,450	6,500	3,770	5,340	5,180	5,340	4,880	4,610	2,940
21	1,100	1,400	1,550	*2,470	5,500	3,770	5,260	5,180	5,180	4,810	4,740	2,820
22	1,100	1,400	1,600	2,470	4,800	3,770	5,260	5,260	5,180	4,810	4,680	2,820
23	1,100	1,400	1,600	2,470	4,300	3,770	5,260	5,260	5,180	4,740	4,640	2,870
24	1,100	1,400	1,600	2,470	3,900	3,710	5,340	5,340	5,340	4,680	4,640	2,820
25	1,100	1,400	1,600	2,470	3,700	3,710	5,340	5,410	5,480	4,740	4,680	2,770
26	1,150	1,400	1,600	2,520	3,500	3,710	5,180	5,560	5,410	4,740	4,680	2,720
27	1,200	1,400	1,600	2,520	3,300	3,770	5,180	5,480	5,180	4,740	4,610	2,770
28	1,200	1,400	1,600	2,470	*3,140	3,530	5,260	5,480	5,040	4,840	4,810	2,820
29	1,200	1,450	1,600	2,470	-	2,670	5,180	5,410	5,000	4,680	4,740	2,820
30	1,250	1,450	1,600	2,520	-	2,300	5,110	5,480	5,040	4,610	4,740	2,720
31	1,300	-	1,600	2,570	-	2,080	-	5,560	-	4,610	4,610	-
Total	33,800	41,100	47,250	62,770	119,550	109,880	144,250	162,870	165,760	143,210	144,080	113,640
Mean	1,090	1,370	1,524	2,025	4,270	3,545	4,808	5,254	5,525	4,620	4,648	3,788
Ac-ft	67,040	81,520	93,720	124,500	237,100	217,900	286,100	323,000	328,800	284,100	285,800	225,400

Calendar year 1952: Max - Min - Mean 5,759 Ac-ft 4,171,000
Water year 1952-53: Max 10,000 Min 1,000 Mean 3,529 Ac-ft 2,555,000

* Discharge measurement made on this day.

Note.— No gage-height record Oct. 1 to Jan. 20, Feb. 16-27, Apr. 15; discharge estimated on basis of records for below Kajakai Reservoir, Arghandab River near Kala Bist and discharge measurements.

Helmand River at Chahar Burjak, Afghanistan
Discharge, in cubic feet per second, water year October 1953 to September 1954

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2,670	2,740	2,800	773	18,910	12,200	25,000	33,000	15,000	7,000	3,100	3,400
2	2,670	2,700	2,800	756			33,000	32,000	15,000	5,000	3,040	3,400
3	2,380	2,670	2,800	756			32,000	32,000	15,000	2,500	3,100	3,400
4	2,080	2,640	2,800	823			27,000	32,000	14,500	1,500	3,100	3,250
5	1,840	2,620	2,800	815			23,000	32,000	14,000	1,200	3,180	3,250
6	1,690	2,600	2,800	764			20,000	32,000	13,500	1,100	3,180	3,100
7	2,200	2,570	2,800	881			18,000	32,000	13,000	*1,080	3,180	3,040
8	2,520	2,600	1,600	1,290			17,000	32,000	13,000	2,000	3,180	2,980
9	2,570	2,600	1,110	1,340			16,000	32,000	12,500	3,550	3,040	2,980
10	2,620	2,600	*839	1,400			15,000	32,000	12,500	3,480	2,980	2,980
11	2,620	2,600	740	1,470			15,000	32,000	12,000	3,100	2,920	2,860
12	2,570	2,600	1,380	3,670			14,000	31,000	12,000	2,920	2,980	2,740
13	2,520	2,620	2,040	4,680			14,000	30,000	11,500	2,800	2,980	2,770
14	*2,520	2,620	2,140	4,680			13,000	29,000	11,000	2,800	2,980	2,770
15	2,540	2,540	2,190	4,680			13,000	29,000	11,000	2,980	3,040	2,770
16	2,540	d1,250	2,230	4,680			13,000	27,000	10,500	2,980	3,040	2,770
17	2,540	d820	2,300	4,680			13,000	25,000	10,500	2,980	3,100	2,770
18	2,600	d820	2,300	4,680			13,000	23,000	9,500	2,980	3,100	2,830
19	2,600	d1,200	2,300	4,610			13,000	22,000	9,000	3,040	3,040	2,890
20	2,600	d2,000	2,300	4,680			13,000	21,000	8,500	3,040	3,040	2,830
21	2,570	2,210	2,300	4,680			12,500	20,500	8,500	2,800	2,980	2,830
22	2,570	2,520	2,340	4,740			13,300	20,000	8,500	2,680	3,040	2,800
23	2,600	2,570	2,340	4,960			16,100	19,500	8,200	2,620	3,320	2,770
24	2,600	2,570	2,340	5,340			19,700	19,000	8,100	2,620	3,320	2,740
25	2,600	2,600	2,340	5,680			24,000	18,500	7,900	2,620	3,320	2,680
26	2,600	2,600	2,340	5,890			27,400	18,000	7,800	2,740	3,320	2,590
27	2,670	2,800	2,340	5,770			31,200	17,000	7,700	2,800	3,320	2,710
28	2,700	2,800	1,730	5,680	18,910		33,300	16,500	7,700	2,740	3,320	2,770
29	2,700	2,800	1,210	5,640	-		34,100	16,000	7,700	2,620	3,180	2,770
30	2,670	2,800	966	5,170	-		34,000	16,000	7,600	2,680	3,360	2,620
31	2,670	-	839	5,000	-	12,200	-	15,500	-	3,100	3,400	-
Total	77,840	71,680	64,144	110,658	529,480	378,200	605,600	786,500	322,700	88,050	97,180	87,050
Mean	2,510	2,389	2,069	3,569	18,910	12,200	20,190	25,370	10,760	2,840	3,135	2,902
Ac-ft	154,400	142,200	127,200	219,500	1,050,000	750,000	1,201,000	1,560,000	640,000	174,000	192,800	172,700

Calendar year 1953: Max 10,000 Min 740 Mean 3,780 Ac-ft 2,736,000
Water year 1953-54: Max - Min 740 Mean 8,819 Ac-ft 6,384,000

* Discharge measurement made on this day.
d Doubtful gage height record; discharge estimated from s tudy of discharge records for Helmand River below Kajakai Reservoir.
Note.— No gage-height record Nov. 25 to Dec. 9, Feb. 1 to Apr. 20, Apr. 30 to July 6; discharge estimated from study of discharge records for Helmand River below Kajakai Dam, Arghandab River near Kala Bist, and temporary station on Helmand R. at Lashkar Gah and discharge measurements.

HELMAND RIVER BASIN

Helmand River at Chahar Burjak, Afghanistan
Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2,540	2,650	2,830	4,350	6,780	4,620	3,890	3,760	a7,000	2,100	2,480	2,700
2	2,510	2,680	2,800	5,280	6,780	4,420	4,090	3,760	a7,000	2,100	2,460	2,650
3	2,460	2,680	2,830	5,520	6,820	4,280	3,950	3,760	a6,800	2,000	2,560	2,680
4	2,460	2,680	2,830	5,620	6,660	4,220	3,890	3,820	a6,800	2,000	2,600	2,680
5	2,460	2,720	2,830	5,620	6,190	4,180	3,820	3,760	a6,600	2,000	2,620	2,650
6	2,460	2,720	2,860	5,980	6,740	4,180	3,820	3,820	a6,600	1,900	2,650	2,700
7	2,460	2,750	a2,700	6,140	6,870	4,150	3,820	3,890	*6,500	1,900	2,650	2,750
8	2,460	2,750	a2,500	6,280	6,820	4,150	3,760	4,020	6,400	1,900	2,600	2,650
9	2,480	2,750	a1,500	6,360	6,740	4,120	3,760	4,420	6,200	1,900	2,560	2,700
10	2,460	2,750	a1,100	6,360	6,620	4,090	3,760	4,720	6,000	1,800	2,510	2,720
11	2,460	2,800	a900	6,360	6,360	4,060	3,690	4,720	5,800	1,800	2,510	2,780
12	*2,480	2,860	a800	6,360	6,060	4,060	3,690	5,020	5,700	1,800	2,600	2,780
13	2,460	2,880	a700	*6,360	6,140	3,980	3,690	4,950	5,600	*1,790	2,600	2,750
14	2,510	2,880	4,220	6,360	6,100	3,980	3,690	4,800	5,500	1,930	2,560	2,720
15	2,510	2,880	5,020	6,360	6,020	3,950	3,690	4,650	5,400	1,630	2,560	2,680
16	2,510	2,860	5,180	6,360	6,020	3,950	3,630	4,580	5,300	1,620	2,600	2,620
17	2,540	2,860	5,280	6,320	*5,900	16,100	3,630	4,500	5,200	1,580	2,580	2,700
18	2,540	2,880	5,280	6,530	5,700	28,200	3,630	4,420	5,100	1,560	2,540	2,780
19	2,540	2,910	5,280	6,740	5,700	17,600	3,570	4,420	5,000	1,950	2,280	2,680
20	2,560	2,910	5,440	6,780	5,580	a10,000	3,570	4,500	4,900	2,280	2,580	2,620
21	2,560	*2,910	5,520	6,780	5,580	a7,000	3,820	4,500	4,000	2,330	2,650	2,560
22	2,580	2,860	5,550	6,700	5,320	a6,000	4,150	4,580	3,000	2,560	2,650	2,510
23	2,580	2,860	5,550	6,700	4,980	a5,400	4,020	4,500	2,100	2,460	2,680	2,510
24	2,580	2,860	5,060	6,660	4,920	a5,600	4,020	4,500	2,000	2,330	*2,720	2,560
25	2,600	2,860	4,380	6,480	4,800	a5,200	3,820	4,500	2,100	2,280	2,720	*2,600
26	2,580	2,860	4,250	6,620	4,720	a4,800	3,760	4,650	2,200	2,220	2,700	2,620
27	2,650	2,860	4,090	6,660	4,650	a4,500	3,760	a5,000	2,200	2,240	2,680	2,650
28	2,650	2,860	3,820	6,660	4,720	a4,300	3,820	a5,500	2,200	2,440	2,650	2,650
29	2,650	2,860	3,690	6,660	-	*4,150	3,820	a6,000	2,200	2,280	2,680	2,650
30	2,650	2,860	3,690	6,700	-	3,950	3,820	a6,700	2,200	2,460	2,700	2,600
31	2,650	-	3,690	6,740	-	3,820	-	a7,000	-	2,540	2,720	-
Total	78,590	84,500	112,170	195,400	166,290	193,010	113,850	143,720	143,600	63,680	80,650	79,900
Mean	2,535	2,817	3,618	6,303	5,939	6,226	3,795	4,636	4,787	2,054	2,602	2,663
Ac-ft	155,900	167,600	222,500	387,600	329,800	382,800	225,800	285,100	284,800	126,300	160,000	158,500

Calendar year 1954: Max 34,100 Min 700 Mean 8,988 Ac-ft 6,507,000
Water year 1954-55: Max 28,200 Min 700 Mean 3,987 Ac-ft 2,887,000

* Discharge measurement made on this day.
a No gage-height record; discharge estimated.

Helmand River at Chahar Burjak, Afghanistan
Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2,600	2,620	2,750	4,280	3,890	5,360	18,000	41,000	12,000	5,800	36,000	6,500
2	2,600	2,620	2,780	4,220	3,820	5,550	20,000	40,000	11,000	5,700	30,000	6,400
3	2,580	2,620	2,800	4,150	3,760	5,980	22,000	38,000	11,000	5,600	18,000	6,400
4	2,540	2,680	2,780	4,220	3,690	5,700	24,000	35,000	10,000	5,500	14,000	6,400
5	2,460	2,600	2,800	*4,620	3,630	5,320	*26,800	33,000	10,000	5,400	13,000	6,300
6	2,480	2,560	2,800	6,360	3,530	5,060	25,500	32,000	8,000	5,300	12,000	6,300
7	2,540	2,540	2,800	6,620	3,570	8,220	24,600	31,000	7,000	5,200	11,000	6,300
8	2,540	2,540	2,800	5,940	3,520	9,450	27,400	30,000	7,200	5,200	11,000	4,000
9	2,580	2,540	2,910	5,020	3,520	8,640	31,700	29,000	7,400	5,100	11,000	2,500
10	2,650	2,540	2,980	4,680	3,460	7,640	34,700	28,000	7,600	5,000	10,000	2,000
11	2,700	2,540	3,460	4,460	3,400	6,700	37,700	27,000	7,800	5,000	9,800	2,000
12	2,620	*2,560	3,400	4,280	3,340	6,020	40,700	26,000	7,800	4,900	9,400	2,000
13	2,580	2,560	3,520	4,220	3,280	5,550	45,000	24,000	7,800	4,900	9,000	2,000
14	2,650	2,560	3,490	4,220	3,280	5,220	48,000	23,000	7,800	4,800	8,800	4,500
15	2,600	2,560	3,460	4,180	3,170	4,950	49,000	22,000	7,600	4,800	8,600	5,400
16	2,600	2,560	12,200	4,150	3,110	4,840	49,000	21,000	7,600	4,800	8,400	6,100
17	2,650	2,560	12,100	4,120	3,110	5,060	47,000	21,000	7,400	4,700	8,000	6,200
18	2,600	2,580	9,020	4,180	3,060	6,020	48,000	20,000	7,200	4,700	7,800	6,300
19	2,600	2,580	7,120	4,150	3,110	5,180	50,000	19,000	7,200	4,700	7,800	6,300
20	2,620	2,580	6,020	4,120	3,260	5,600	50,000	19,000	7,000	10,000	7,600	6,300
21	2,650	2,600	5,550	4,420	3,370	7,000	50,000	18,000	6,800	20,000	7,400	6,300
22	2,650	2,600	5,250	4,350	3,260	13,000	51,000	17,000	6,800	30,000	7,300	*6,300
23	2,620	2,600	4,980	4,250	3,110	14,000	53,000	16,000	6,600	34,000	7,200	*6,300
24	2,650	2,650	4,720	4,180	2,960	14,000	55,000	16,000	6,600	34,000	7,100	6,300
25	2,680	2,750	4,650	4,150	2,960	12,000	55,000	15,000	6,400	31,000	6,800	6,200
26	2,620	2,720	4,580	4,090	2,980	11,000	52,000	14,000	6,300	29,000	6,800	6,200
27	2,600	2,750	4,580	4,060	2,980	12,000	49,000	14,000	6,200	28,000	6,700	6,200
28	2,620	2,750	4,620	4,020	3,110	18,000	46,000	13,000	6,200	26,000	6,600	6,200
29	2,680	2,750	4,540	3,980	3,060	27,500	44,000	13,000	6,100	32,000	6,600	6,200
30	2,620	2,750	4,420	3,950	-	25,000	42,000	12,000	6,000	38,000	6,600	6,200
31	2,620	-	4,420	3,920	-	20,000	-	12,000	-	40,000	6,600	-
Total	80,800	78,320	144,300	137,560	96,350	295,560	1,216,100	719,000	230,400	449,100	326,900	162,600
Mean	2,606	2,611	4,655	4,437	3,322	9,534	40,540	23,190	7,680	14,490	10,550	5,420
Ac-ft	160,300	155,300	286,200	272,800	191,100	586,200	2,412,000	1,426,000	457,000	890,800	648,400	322,500

Calendar year 1955: Max 28,200 Min 1,560 Mean 4,064 Ac-ft 2,942,000
Water year 1955-56: Max 55,000 Min 2,000 Mean 10,760 Ac-ft 7,809,000

* Discharge measurement made on this day.
Note.— No gage-height record Mar. 20 to Apr. 4, Apr. 13 to Sept. 30; discharge estimated on basis of records for temporary gage at Lashkar Gah, Arghandab River at Kala Bist and weather records.

HELMAND RIVER BASIN

Helmand River at Chahar Burjak, Afghanistan
Discharge, in cubic feet per second, water year October 1956 to September 1957

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	6,200	1,480	3,760	4,760	10,000	5,000	22,000	47,000	32,000	10,500	6,100	6,100
2	6,200	1,480	3,760	5,740	10,000	*4,500	22,000	46,000	32,000	10,000	6,000	6,100
3	6,800	3,010	3,760	*5,940	10,000	4,150	20,000	47,000	32,000	10,500	5,700	6,200
4	6,200	3,660	3,790	6,100	10,000	6,500	19,000	50,000	32,000	10,500	5,700	6,200
5	6,200	3,760	3,820	6,100	10,000	8,120	25,000	60,000	32,000	10,000	5,700	6,000
6	6,100	3,760	3,820	6,190	10,000	8,310	45,000	70,000	32,000	10,000	5,600	6,000
7	6,100	3,790	3,820	6,320	10,000	8,550	80,000	80,000	32,000	9,500	5,600	6,000
8	6,100	3,860	3,790	6,360	10,000	8,450	78,000	85,000	31,000	9,500	5,500	6,200
9	6,100	3,860	3,790	6,400	10,500	8,400	76,000	80,000	30,000	9,500	5,500	6,400
10	6,100	3,860	3,790	6,660	11,000	8,310	70,000	75,000	28,000	9,000	5,400	7,000
11	6,000	3,820	3,820	6,780	11,500	8,400	66,000	68,000	27,000	8,800	5,400	6,200
12	6,000	3,860	3,820	7,550	12,000	8,500	62,000	62,000	25,000	8,600	5,400	6,000
13	6,000	3,820	3,860	8,070	12,000	8,600	62,000	56,000	23,000	8,500	5,400	6,000
14	6,000	3,790	3,860	7,550	11,500	8,400	60,000	56,000	22,000	8,200	5,600	6,000
15	6,000	3,760	3,860	9,730	11,500	8,120	60,000	58,000	21,000	8,000	5,700	6,000
16	2,300	3,760	3,860	12,000	11,000	7,880	62,000	58,000	20,000	8,000	5,800	6,000
17	2,200	3,760	3,860	15,000	10,000	8,400	71,000	54,000	19,000	7,800	6,000	*5,910
18	2,100	3,760	3,860	13,000	9,500	8,310	74,000	50,000	18,000	7,400	2,500	5,910
19	2,000	3,760	3,860	11,000	9,200	8,430	74,000	46,000	17,000	7,300	1,300	5,990
20	1,900	3,760	3,860	9,000	9,000	10,000	70,000	45,000	17,000	7,300	1,200	6,070
21	1,800	3,760	3,860	8,600	9,000	80,000	66,000	44,000	16,000	7,200	1,150	6,070
22	1,800	3,760	3,860	8,600	9,000	70,000	64,000	44,000	16,000	7,200	1,100	5,990
23	1,700	3,760	3,860	8,500	9,000	50,000	62,000	44,000	15,000	7,200	1,050	5,950
24	*1,700	3,690	3,950	8,600	9,000	35,000	60,000	43,000	14,000	7,200	1,000	5,990
25	1,600	3,690	4,020	9,000	9,000	30,000	58,000	43,000	14,000	7,000	1,000	6,030
26	1,510	3,720	4,280	9,000	9,000	25,000	55,000	42,000	13,000	6,800	5,700	5,990
27	1,480	3,760	4,320	9,500	9,000	22,000	54,000	42,000	13,000	6,800	6,000	5,870
28	1,480	3,760	4,320	14,000	7,000	21,000	52,000	38,000	12,000	6,500	6,000	6,030
29	1,480	3,760	4,320	18,000	-	20,000	52,000	36,000	12,000	6,500	6,000	5,990
30	1,450	3,760	4,320	15,000	-	20,000	50,000	35,000	12,000	6,500	6,100	6,030
31	1,460	-	4,380	12,000	-	22,000	-	33,000	-	6,400	6,100	-
Total	119,460	107,790	121,910	281,050	278,700	550,330	1,691,000	1,637,000	659,000	254,200	142,300	182,220
Mean	3,854	3,593	3,933	9,066	9,954	17,750	56,370	52,810	21,970	8,200	4,590	6,074
Ac-ft	236,900	213,800	241,800	557,500	552,800	1,092,000	3,354,000	3,247,000	1,307,000	504,200	282,200	361,400

Calendar year 1956: Max 55,000 Min 1,450 Mean 10,810 Ac-ft 7,899,000
Water year 1956-57: Max 85,000 Min 1,000 Mean 16,510 Ac-ft 11,950,000

* Discharge measurement made on this day.
Note.— No gage-height record Oct. 1-24, Jan. 16 to Mar. 1, Mar. 20 to Sept. 16; discharge estimated on basis of records for stations upstream and discharge measurements.

Helmand River at Chahar Burjak, Afghanistan
Discharge, in cubic feet per second, water year October 1957 to September 1958

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	6,070	5,910	5,600	9,200	8,600	6,890	5,830	19,900	8,350	5,870	5,480	5,450
2	5,990	5,830	5,380	9,000	8,600	6,860	5,950	19,500	8,120	5,870	5,450	5,520
3	5,990	5,830	5,300	9,000	8,600	6,980	5,910	18,900	7,980	5,910	5,450	5,640
4	6,070	5,830	5,220	9,000	8,800	6,880	5,870	18,100	7,940	5,950	5,380	5,640
5	5,910	5,910	5,080	8,900	9,600	6,890	5,990	17,300	8,000	5,950	5,260	5,480
6	6,150	5,910	5,000	8,800	9,400	6,940	6,720	16,600	8,000	5,870	5,180	5,260
7	6,230	5,910	5,000	8,600	9,200	6,980	6,980	15,700	7,700	5,790	5,150	5,080
8	6,230	5,910	4,960	8,600	8,900	6,860	7,060	15,000	7,400	5,830	5,180	5,080
9	6,150	5,910	5,910	8,400	8,700	6,860	7,020	14,400	7,200	5,870	5,300	4,920
10	6,070	4,620	9,700	8,500	8,500	6,720	7,060	14,000	7,200	5,790	5,300	4,960
11	6,230	2,100	16,800	8,500	8,200	6,470	6,880	13,400	7,000	5,680	5,220	5,150
12	6,230	854	15,000	8,700	8,000	6,310	6,890	12,800	6,700	4,250	5,180	5,080
13	6,110	868	20,000	8,800	7,900	6,390	6,860	12,200	6,600	3,220	5,300	4,850
14	6,550	929	27,500	8,800	7,700	6,430	6,640	11,800	6,500	5,150	*5,380	4,850
15	6,720	*1,000	23,200	8,900	7,670	6,430	*6,720	11,600	6,400	5,750	5,260	4,820
16	5,990	958	15,300	8,800	7,580	6,390	6,720	11,400	6,300	5,680	5,180	5,300
17	5,910	910	12,900	8,700	7,670	6,390	6,790	10,800	6,200	5,600	5,150	5,300
18	6,070	896	11,500	8,600	7,490	6,230	6,790	10,800	6,100	5,600	5,150	5,420
19	6,070	882	10,700	8,600	7,320	6,190	8,030	10,800	*6,070	5,640	5,180	5,600
20	6,150	910	10,400	8,600	7,320	6,190	10,600	10,500	6,030	5,830	5,220	4,960
21	6,070	2,700	10,100	8,700	7,320	6,110	12,700	10,400	6,150	5,830	5,150	4,740
22	5,910	3,500	9,700	8,800	7,180	5,990	14,000	10,300	6,070	5,830	5,120	4,700
23	5,910	8,300	9,500	8,800	7,280	5,830	14,900	9,950	6,030	5,990	5,180	4,700
24	6,070	7,490	9,300	8,900	7,230	5,790	16,100	9,550	6,070	5,950	5,040	4,700
25	6,070	6,310	9,400	9,000	7,180	5,720	16,900	9,100	5,990	5,640	5,080	4,740
26	6,070	5,910	9,300	8,900	7,140	5,600	17,500	9,200	5,910	5,520	5,080	4,740
27	6,070	6,550	9,200	8,800	6,980	5,560	18,100	9,250	5,910	5,450	5,080	4,740
28	6,070	7,060	9,100	8,800	6,890	5,600	18,600	9,100	5,870	5,420	5,120	4,550
29	5,000	6,550	9,100	8,800	-	5,520	19,500	8,950	5,790	5,450	5,080	4,660
30	6,030	5,910	9,000	8,800	-	5,520	19,800	8,700	5,830	5,450	5,260	4,740
31	6,030	-	9,200	8,700	-	5,600	-	8,500	-	5,450	5,420	-
Total	188,190	128,157	323,350	272,000	222,950	195,120	305,410	388,500	201,410	173,080	161,960	151,370
Mean	6,071	4,272	10,430	8,774	7,962	6,294	10,180	12,530	6,714	5,583	5,225	5,046
Ac-ft	373,300	254,200	641,400	539,500	442,200	387,000	605,800	770,600	399,500	343,300	321,300	300,300

Calendar year 1957: Max 85,000 Min 854 Mean 17,300 Ac-ft 12,530,000
Water year 1957-58: Max 25,500 Min 854 Mean 7,429 Ac-ft 5,378,000

* Discharge measurement made on this day.
Note.— No gage-height record Jan. 14 to Feb. 14, June 4-18; discharge estimated on basis of records for stations upstream.

HELMAND RIVER BASIN

Helmand River at Chahar Burjak, Afghanistan
Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	4,930	5,000	2,990	4,180	4,600	5,280	13,000	21,200	11,100	7,060	5,200	4,360
2	4,930	5,000	3,050	4,120	4,530	5,120	12,500	20,400	10,800	7,010	5,160	4,460
3	5,000	4,900	3,050	4,120	4,460	5,160	12,200	19,800	10,600	6,620	5,160	4,460
4	5,000	4,800	3,020	4,090	4,400	16,600	12,300	19,400	10,300	6,460	5,040	4,460
5	5,000	4,800	3,050	4,120	4,330	19,500	13,100	18,300	10,000	6,300	5,000	4,400
6	5,000	4,800	3,100	4,210	4,330	13,800	16,000	17,700	9,760	6,130	4,900	4,400
7	5,000	4,700	3,080	4,330	4,400	13,300	17,200	17,100	9,650	5,910	4,870	4,430
8	5,000	4,700	3,080	4,430	4,330	11,900	15,700	16,500	9,600	5,910	*4,800	4,400
9	5,000	4,700	3,050	4,460	4,020	10,800	14,400	16,200	9,430	6,130	4,660	4,400
10	5,000	4,600	3,050	4,400	3,960	9,920	13,400	15,600	9,100	6,400	4,600	4,330
11	5,000	4,600	3,050	4,330	3,930	8,990	12,800	15,200	8,820	6,180	4,560	4,150
12	5,000	4,600	3,050	4,240	4,020	9,920	12,400	14,900	8,720	5,960	4,600	3,870
13	5,000	*4,600	3,080	4,210	4,210	11,800	12,400	14,500	8,440	5,960	4,930	3,870
14	5,000	*4,660	3,240	4,150	4,430	10,400	12,100	14,300	7,940	5,800	5,160	3,870
15	5,000	4,660	3,610	4,150	4,760	9,380	12,000	14,000	7,890	5,720	4,730	3,870
16	5,000	4,630	4,400	4,150	5,240	8,440	11,800	13,600	7,560	5,600	4,500	3,810
17	5,000	3,260	3,900	4,150	5,000	7,840	11,300	13,300	7,280	5,560	4,430	3,810
18	5,000	3,020	3,720	4,150	4,660	7,230	10,800	12,900	7,450	5,480	4,460	3,930
19	5,000	*2,940	3,750	4,210	4,460	6,900	12,200	*12,700	7,500	5,280	4,460	4,090
20	5,000	2,820	3,870	4,240	4,180	6,520	15,100	13,500	7,500	5,160	4,400	4,020
21	4,900	2,840	3,720	4,360	8,450	8,110	18,200	14,300	7,500	5,240	4,300	3,900
22	4,600	2,920	3,750	4,360	6,620	9,480	20,200	14,300	7,400	6,080	4,400	3,780
23	4,500	2,940	3,840	4,360	5,230	9,920	21,700	14,100	7,400	5,800	4,500	3,580
24	4,700	2,920	4,210	4,330	5,040	10,200	23,000	14,400	7,230	5,320	4,400	3,580
25	5,000	2,890	4,730	4,300	*4,760	10,200	23,600	13,700	7,180	5,400	4,360	3,610
26	5,000	2,890	4,270	4,300	*4,700	10,200	24,400	13,000	7,230	5,320	4,360	3,660
27	5,000	2,860	4,020	4,400	5,360	10,100	24,600	12,700	7,450	5,200	4,400	3,440
28	5,000	2,860	3,870	4,630	5,520	10,000	24,000	12,200	7,670	5,200	4,360	3,050
29	5,000	2,840	3,840	4,600	-	9,980	23,000	12,000	7,450	7,460	4,400	2,940
30	5,000	2,860	3,870	4,530	-	10,600	22,000	11,700	7,060	6,350	4,360	2,920
31	5,000	-	4,210	4,530	-	12,800	-	11,200	-	5,520	4,330	-
Total	153,560	116,610	110,520	133,140	133,980	310,390	487,400	464,600	253,010	182,520	143,790	117,650
Mean	4,954	3,887	3,565	4,295	4,785	10,010	16,250	14,990	8,434	5,920	4,638	3,928
Ac-ft	304,600	231,300	219,200	264,100	265,700	615,600	966,700	921,500	501,800	364,000	285,200	233,800

Calendar year 1958: Max 19,900 Min 2,820 Mean 6,719 Ac-ft 4,865,000
Water year 1958-59: Max 24,600 Min 2,820 Mean 7,146 Ac-ft 5,174,000

* Discharge measurement made on this day.
Note.-- No gage-height record Oct. 3 to Nov. 13; discharge estimated on basis of recorded range in stage and records for station at Darweshan.

Helmand River at Chahar Burjak, Afghanistan
Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3,330	2,730	2,730	5,560	3,440	2,200	4,200	7,010	17,500	4,600	2,080	1,900
2	3,490	2,790	2,760	5,480	3,440	2,200	3,700	6,790	17,600	4,400	2,080	1,900
3	3,180	2,890	2,790	5,520	3,550	2,200	3,400	6,570	17,600	4,200	2,060	1,900
4	3,290	2,890	2,730	5,960	3,490	2,200	3,100	6,080	17,400	4,000	2,060	1,900
5	3,240	2,840	5,600	6,300	3,460	2,200	3,000	6,020	17,000	3,800	2,060	1,850
6	3,100	2,860	5,910	*6,080	3,440	2,100	*2,920	5,960	16,800	3,600	1,920	1,800
7	3,080	2,890	4,210	5,910	3,260	2,000	2,890	6,300	16,400	3,500	1,660	1,800
8	3,050	2,990	3,810	5,760	3,200	1,900	2,630	*6,240	15,900	3,400	1,660	1,800
9	2,990	3,020	3,550	5,680	3,150	1,900	2,820	5,960	15,600	3,300	1,660	1,850
10	2,940	2,990	3,410	5,600	3,150	1,900	2,940	5,910	13,400	3,200	1,680	1,900
11	2,990	2,960	3,350	5,600	3,150	1,800	3,020	5,910	11,200	3,000	1,700	1,950
12	2,890	2,940	3,260	5,560	3,150	1,800	3,080	6,460	11,200	2,900	1,700	2,000
13	2,860	2,840	3,180	4,870	3,100	1,900	3,080	9,870	10,600	2,800	1,700	2,000
14	2,840	2,660	3,720	4,020	2,840	2,000	3,120	12,400	10,100	2,700	1,700	2,000
15	2,860	2,660	4,660	3,840	2,840	2,300	3,150	13,700	9,870	2,600	1,700	2,000
16	2,860	2,680	5,480	3,780	2,840	2,600	3,120	16,400	9,700	2,500	1,700	2,000
17	2,840	2,700	5,600	3,720	2,840	5,000	2,990	18,300	9,480	*2,400	1,700	2,000
18	2,860	2,760	5,960	3,660	2,700	6,000	3,020	20,000	9,540	2,260	1,700	*2,000
19	*2,840	2,760	6,180	3,610	2,600	5,400	10,500	21,100	9,480	2,200	1,700	2,020
20	2,700	2,760	6,130	3,610	2,500	4,600	17,100	22,200	9,600	2,160	1,700	2,040
21	2,680	2,790	6,020	3,580	2,400	4,000	15,600	23,300	9,430	2,140	1,700	2,000
22	2,660	2,820	6,020	3,550	2,300	3,800	11,200	23,400	8,880	2,080	1,700	2,020
23	2,680	2,840	5,910	3,490	2,300	3,700	9,820	23,400	8,820	2,060	1,750	1,940
24	2,700	2,840	5,800	3,520	2,300	3,600	9,160	23,000	8,820	2,040	1,750	1,920
25	2,730	2,840	5,800	3,460	2,300	3,200	8,720	22,700	7,000	2,060	1,750	1,940
26	2,700	2,840	5,800	3,490	2,300	3,100	8,220	21,800	6,500	2,060	1,800	1,960
27	2,730	2,820	5,720	3,460	2,300	3,000	7,840	20,700	6,000	2,060	1,850	1,960
28	2,730	2,820	5,680	3,440	2,300	2,900	7,560	19,600	5,500	2,080	1,900	1,980
29	2,730	2,790	5,640	3,460	2,300	3,000	7,340	18,800	5,200	2,080	1,900	2,040
30	2,730	2,680	5,640	3,440	-	3,200	7,230	17,900	4,900	2,080	1,900	2,080
31	2,700	-	5,640	3,440	-	4,400	-	17,600	-	2,080	1,900	-
Total	90,000	84,690	148,690	138,450	82,940	92,100	176,470	441,380	337,020	86,340	55,820	58,450
Mean	2,903	2,823	4,796	4,466	2,860	2,971	5,882	14,240	11,230	2,785	1,801	1,948
Ac-ft	178,500	168,000	294,900	274,600	164,500	182,700	350,000	875,500	668,500	171,300	110,700	115,900

Calendar year 1959: Max 24,600 Min 2,660 Mean 6,989 Ac-ft 5,060,000
Water year 1959-60: Max 23,400 Min 1,660 Mean 4,897 Ac-ft 3,555,000

* Discharge measurement made on this day.

Note.-- No gage-height record Feb. 8-14, Feb. 14 to Apr. 5, June 25 to July 17, Aug. 11 to Sept. 17; discharge estimated on basis of recorded range in stage and records for station at Darweshan.

HELMAND RIVER BASIN

Helmand River at Shela Charkh, Afghanistan

Location.— Lat 31° 02' N., long 61° 52' E., on left bank at bridge site at village of Shela Charkh about 8 kilometers south of Kala Kang, about 24 kilometers southwest from Chakansur, about 28 kilometers downstream from Seistan Diversion, and about 105 kilometers downstream from Chahar Burjak.

Records available.— August 1955 to September 1957, September 1960. Occasional discharge measurements from Feb. 27, 1953 to August 23, 1955 and May 20, 1959 to Sept. 17, 1960.

Gage.— Staff gage or reference point.

Extremes.—

1956: Maximum daily discharge 12,000 cfs May 8-11, July 23, 24, 30; minimum daily, 214 cfs July 12.

1957: Maximum daily discharge, 36,000 cfs May 13, from rating curve extended above 3,200 cfs; minimum daily 260 cfs Aug. 24, 25.

Remarks.— Records fair except those for periods of no gage height and those above 6,000 cfs which are poor. Extensive diversions for irrigation upstream. Discharge measurements listed below were made outside period of record.

Date	Gage Height (meters)	Discharge (cfs)	Date	Gage Height (meters)	Discharge (cfs)
Feb. 27, 1953	—	217	July 13, 1955	1.35	577
June 9, 1953	—	1240	Aug. 23, 1955	1.66	1190
Aug. 13, 1953	—	1080	Sept. 26, 1955	1.64	1070
Oct. 14, 1953	—	456	May 20, 1959	1.01	6010
July 8, 1954	—	732	Aug. 7, 1959	—	2290
Sept. 3, 1954	0.82	1880	Oct. 22, 1959	—	1330
Oct. 11, 1954	.465	900	Jan. 7, 1960	.96	3340
Nov. 22, 1954	.42	888	Apr. 9, 1960	.55	1840
Jan. 14, 1955	1.50	3380	May 15, 1960	1.46	4560
Feb. 18, 1955	1.045	2230	July 19, 1960	.25	1210
Mar. 30, 1955	.66	1960	Sept. 17, 1960	.16	900
June 7, 1955	1.225	2610			

HELMAND RIVER BASIN

Helmand River at Shela Charkh, Afghanistan

Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,100	1,120	760	2,240	1,680	1,080	2,730	850	3,060	464	7,860	2,570
2	1,310	1,100	850	1,540	1,680	1,100	2,730	850	3,060	432	5,060	1,750
3	1,220	1,120	860	1,610	1,600	2,620	2,730	425	2,950	425	4,500	1,310
4	1,190	1,100	1,320	*1,540	1,580	2,430	2,730	425	2,620	412	3,940	810
5	1,240	850	1,320	1,500	1,790	2,380	2,730	425	1,990	335	3,000	770
6	1,250	850	1,340	1,620	1,910	2,340	586	425	1,680	260	2,900	780
7	1,240	850	1,280	2,600	1,890	2,290	850	243	1,640	230	2,620	2,620
8	1,160	850	1,280	2,620	1,830	2,290	406	12,000	1,580	226	2,620	2,840
9	1,060	830	1,200	2,480	1,870	3,360	850	12,000	1,500	226	3,060	2,840
10	1,090	800	1,320	2,080	2,060	4,220	1,580	12,000	1,500	226	3,060	2,840
11	1,200	790	1,380	1,850	2,010	3,800	2,620	12,000	1,420	226	3,060	2,840
12	1,280	780	1,830	1,660	1,950	2,900	2,620	3,000	1,250	214	3,060	2,840
13	1,290	*750	2,110	1,480	1,870	2,810	2,620	2,900	1,250	310	3,060	2,950
14	1,220	750	2,070	1,360	1,850	2,870	2,620	2,620	1,380	340	2,950	3,060
15	1,240	710	1,890	1,320	1,750	2,600	2,620	2,620	1,250	335	2,840	2,950
16	1,340	690	1,810	1,300	1,680	2,620	2,620	3,060	1,250	325	2,620	2,730
17	1,300	690	2,900	1,250	1,660	2,480	1,580	3,060	1,130	7,200	2,570	2,730
18	1,320	690	7,480	1,240	1,750	2,400	1,580	3,060	1,080	12,000	2,460	2,800
19	1,280	680	4,010	1,250	1,750	2,530	1,580	2,950	975	12,000	2,380	2,900
20	1,220	660	3,550	1,280	1,610	2,870	1,580	2,950	875	2,950	2,430	2,900
21	1,300	634	2,810	1,360	1,640	2,650	1,580	2,950	860	2,900	2,460	3,000
22	1,250	634	2,700	1,380	1,700	2,620	1,580	2,840	830	2,950	2,380	3,100
23	1,240	618	2,400	1,420	1,580	3,360	1,580	2,840	790	12,000	2,380	3,100
24	1,300	634	2,400	1,400	1,460	2,730	2,620	2,840	750	12,200	2,340	*3,120
25	1,200	670	2,550	1,400	1,320	7,530	2,620	4,500	634	425	2,340	2,900
26	1,200	690	2,530	1,370	1,090	5,840	2,620	4,500	570	425	2,430	2,840
27	1,360	690	2,340	1,680	1,040	5,440	2,620	4,500	562	850	2,430	2,840
28	1,260	690	2,360	1,660	1,220	6,200	1,580	4,500	554	850	2,460	2,840
29	1,220	690	2,380	1,640	1,150	11,000	1,580	3,940	514	1,320	2,530	2,950
30	1,220	670	2,570	1,680	-	2,900	1,180	3,940	498	12,000	2,620	2,950
31	1,190	-	2,620	1,660	-	3,900	-	3,060	-	10,500	2,840	-
Total	38,280	23,280	68,220	50,380	47,940	106,160	59,522	118,273	40,002	95,556	93,260	77,470
Mean	1,235	776	2,201	1,625	1,671	3,425	1,984	3,815	1,333	3,082	3,008	2,582
Ac-ft	75,930	46,180	135,300	99,930	95,090	210,600	118,100	234,600	79,340	189,500	185,000	153,600

Water year 1955-56: Max 12,200 Min 214 Mean 2,256 Ac-ft 1,623,000

* Discharge measurement made on this day.

Note.--No gage-height record Sept. 17-23; discharge estimated on basis of records for station at Chahar Burjak.

HELMAND RIVER BASIN

Helmand River at Shela Charkh, Afghanistan

Discharge, in cubic feet per second, water year October 1956 to September 1957

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3,060	554	2,380	2,050	4,980	3,560	3,940	4,150	9,260	1,790	690	600
2	2,950	554	2,480	2,340	4,980	2,240	2,620	4,150	9,260	1,700	730	600
3	2,950	642	2,620	2,620	4,980	*1,890	2,620	4,150	8,540	1,610	720	600
4	2,950	2,180	2,620	*2,620	4,980	1,700	8,900	4,290	7,860	1,540	680	600
5	3,060	2,340	2,620	2,680	4,980	2,900	8,900	4,290	7,860	1,400	680	600
6	3,120	2,340	2,680	2,780	4,980	4,080	8,900	6,200	7,860	1,380	670	600
7	3,230	2,290	2,680	2,780	4,980	3,740	5,220	8,900	7,860	1,340	660	600
8	3,420	2,290	2,700	2,780	4,740	4,430	3,420	10,500	6,800	1,310	660	600
9	3,060	2,340	2,730	2,840	3,940	4,430	7,420	12,300	6,800	1,280	650	600
10	3,120	2,380	2,760	3,060	3,940	3,740	7,420	12,300	5,660	1,250	640	600
11	3,480	2,320	2,780	3,060	5,660	4,430	12,300	17,000	5,660	1,190	640	600
12	3,480	2,200	2,620	3,120	5,220	4,430	12,300	23,000	4,820	1,180	640	600
13	3,300	2,200	2,620	3,120	3,940	4,430	14,500	36,000	4,820	1,100	640	600
14	3,300	2,290	2,570	3,120	3,360	4,660	12,300	27,000	4,360	1,040	640	600
15	3,300	2,290	2,570	3,120	3,360	4,430	12,300	12,300	4,360	988	640	600
16	2,460	2,290	2,570	3,800	3,360	4,080	12,300	7,420	4,080	950	640	600
17	1,600	2,290	2,570	2,530	3,170	3,740	8,900	6,200	3,940	925	640	600
18	1,440	2,290	2,550	6,500	3,170	4,290	8,900	4,290	3,940	840	450	600
19	1,340	2,290	2,380	3,870	3,120	5,060	8,900	4,290	3,300	750	350	600
20	1,340	2,290	2,240	3,870	3,120	4,430	12,300	3,300	3,060	770	300	600
21	1,190	2,340	2,240	3,870	4,360	8,190	14,500	2,620	3,060	720	290	600
22	1,190	2,570	2,240	3,870	4,220	18,500	17,000	2,620	2,950	690	280	600
23	1,150	2,760	2,150	3,230	3,550	25,100	17,000	10,500	2,950	650	270	600
24	1,000	2,650	2,240	3,230	3,550	6,900	14,400	9,140	2,950	660	260	600
25	*850	2,550	2,320	3,230	3,550	3,940	12,300	8,900	2,600	690	260	600
26	830	2,500	2,400	3,060	3,610	3,000	8,900	8,900	2,460	670	600	600
27	740	2,480	2,570	3,480	3,480	3,000	6,400	6,200	2,340	670	600	600
28	660	2,480	2,620	2,620	3,360	3,000	6,400	6,200	2,130	670	600	600
29	602	2,460	2,480	2,620	-	8,660	4,150	8,900	2,050	634	600	600
30	586	2,430	2,320	10,500	-	10,000	4,150	8,900	1,950	730	600	600
31	578	-	1,850	7,860	-	3,120	-	8,900	-	690	600	-
Total	65,316	65,880	77,150	110,230	114,640	169,700	279,560	293,810	145,570	31,807	17,320	18,000
Mean	2,107	2,196	2,489	3,556	4,094	5,474	9,319	9,478	4,852	1,026	559	600
Ac-ft	129,600	130,700	153,000	218,600	227,400	336,600	554,500	582,800	288,700	63,090	34,350	35,700

Calendar year 1956: Max 12,000 Min 214 Mean 2,451 Ac-ft 1,779,000
Water year 1956-57: Max 36,000 Min 260 Mean 3,805 Ac-ft 2,755,000

* Discharge measurement made on this day.
Note.—No gage-height record Aug. 2 to Sept. 30; discharge estimated on basis of records for station at Chahar Burjak.

HELMAND RIVER BASIN

Kash River near Dilaram, Afghanistan

Location.— Lat. 32° 10' N., long 63° 25' E., on right bank about 300 meters downstream from highway bridge at Dilaram, about 180 kilometers upstream from Chakhansur.
Drainage area.— 2,080 sq mi, approximately.
Records available.— October 1952 to September 1960.
Gage.— Water-stage recorder. Prior to Aug. 1, 1958, water-stage recorder on left bank about 3 kilometers downstream at same datum.
Average discharge.— 8 years, 712 cfs (515,500 acre-ft per year).
Extremes.— Maximum and minimum discharges for the water years 1952-60 are contained in the following table:

Water year	Maximum			Minimum		
	Date	Gage Height (meters)	Discharge (cfs)	Date	Gage Height (meters)	Discharge (cfs)
1953	Feb. 14, 1953	2.52	26,700	Many days		0
1954	Feb. 13, 1954	1.83	9,380	Many days		0
1955	Mar. 15, 1955	2.97	49,000	Many days		a2
1956	Mar. 4, 1956	2.56	35,100	Many days		a4
1957	Mar. 17, 1957	-	a45,000	Many days		a10
1958	Dec. 6, 1957	1.90	15,100	Sept. 6-11,1958	b5.14	a5
1959	Mar. 2, 1959	b6.44	8,100	Sept. 23, 1959	5.245	4.4
1960	Apr. 16, 1960	7.515	21,600	Oct. 1-31, 1959	5.26	a5

a Mean daily discharge.
b Present site.

Remarks.— Records fair except those for periods of doubtful or no gage-height record, which are poor. Many small diversions for irrigation upstream.

HELMAND RIVER BASIN

Kash River near Dilaram, Afghanistan
Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1		0	1	4	49	a360	318	318	200	4		
2		0	1	3	43	a350	318	295	295	4		
3		0	2	3	49	a350	295	286	635	3		
4		0	2	3	49	a340	295	266	560	2		
5		0	2	3	49	a340	295	257	522	2		
6		0	2	3	31	a500	276	248	448	2		
7		0	2	3	43	780	276	238	*341	1		
8		0	2	1	49	1,360	276	238	276	1		
9		0	2	2	247	1,070	276	200	219	1		
10		0	2	3	2,700	870	257	194	174	2		
11		0	2	1	1,410	780	257	187	148	3		
12		0	1	1	238	690	8,080	180	126	4		
13		0	3	128	3,030	635	1,260	*174	112	4		
14		0	2	48	8,460	610	*1,100	161	99	5		
15		0	2	31	1,280	560	900	148	86	5		
16		0	3	13	870	560	795	148	76	7		
17		0	2	13	690	535	720	135	62	4		
18		0	2	13	610	*510	635	135	64	4		
19		0	2	21	*560	460	585	135	55	*2		
20		0	2	25	510	435	560	126	49	0		
21		0	3	31	460	410	510	117	43	0		
22		0	3	31	435	410	485	112	37	0		
23		0	3	31	410	387	485	104	31	0		
24		0	3	37	410	387	435	99	24	0		
25		1	3	43	a400	410	435	99	21	0		
26		1	2	37	a390	435	410	94	24	0		
27		2	2	37	a380	410	376	117	19	0		
28		2	3	43	a370	387	364	248	21	0		
29		2	3	43	-	364	341	219	13	0		
30		2	3	43	-	341	318	248	5	0		
31		-	3	49	-	341	-	200	-	0		
Total	0	10	70	747	24,622	16,377	21,933	5,726	4,785	60	0	0
Mean	0	0.3	2.3	24.1	865	528	731	185	154	1.94	0	0
Ac-ft	0	20	138	1,480	48,840	32,480	43,500	11,360	9,490	119	0	0

Calendar year 1952: Max - Min - Mean - Ac-ft
Water year 1952-53: Max 8,460 Min 0 Mean 204 Ac-ft 146,600

* Discharge measurement made on this day.
a No gage-height record; discharge interpolated.

Khash River near Dilaram, Afghanistan

Discharge, in cubic feet per second, water year October 1953 to September 1954

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0	1	2	9	50	400	2,000	1,320	295	90	10	2
2	0			9	40	400	3,000	1,250	276	83		
3	0			9	49	380	4,000	1,180	257	83		
4	0			104	69	360	6,000	1,100	238	76		
5	0			3,910	50	360	7,000	1,070	219	76	10	
6	0			1,540	40	350	5,000	1,030	200	69	8	
7	0			764	35	350	6,000	960	187	69		
8	0			*161	50	350	5,000	900	187	62		
9	0			83	d274	350	4,000	900	174	55		
10	0			69	d7,260	600	3,000	*930	161	55	8	
11	0		2	62	d6,820	500	2,400	870	148	49	6	
12	0		1	60	d4,680	450	2,200	840	135	49		
13	0		1	55	*d3,850	450	2,100	810	126	43		
14	0		2	50	d6,320	450	*2,100	750	126	43		
15	0		2	50	d3,340	500	2,100	*720	126	43	6	
16	0		3	45	3,500	600	2,100	690	117	43	4	
17	0		4	40	2,000	700	2,050	660	108	43		
18	0		4	40	1,500	600	2,050	610	135	43		
19	0		5	40	1,000	600	2,050	585	148	43		
20	0		4	35	800	700	2,000	560	148	37	4	
21	0		4	35	700	1,000	1,950	510	*135	*31	3	
22	0		5	30	600	1,500	1,900	510	148	37		
23	0		7	30	550	2,500	1,850	485	148	37		
24	0		7	30	500	3,000	1,800	460	135	37		
25	0		5	25	500	*2,720	1,750	435	126	31	3	
26	0		5	25	450	2,300	1,660	410	117	25	2	
27	0		5	25	450	2,500	1,580	387	108	17		
28	1		5	40	400	2,300	1,540	387	99	17		
29	1		5	1,830	-	2,000	1,450	364	99	13		
30	1	1	7	396	-	1,500	1,360	341	90	12	2	2
31	1	-	11	69	-	1,200	-	318	-	12	*2	-
Total	4	30	114	9,670	45,877	31,970	82,990	22,342	4,716	1,423	167	60
Mean	0.1	1	3.7	312	1,638	1,031	2,766	721	157	45.9	5.4	2
Ac-ft	8	60	226	19,180	91,000	63,410	164,600	44,310	9,350	2,820	331	119

Calendar year 1953: Max 8,460 Min 0 Mean 304 Ac-ft 147,600
Water year 1953-54: Max 7,260 Min 0 Mean 546 Ac-ft 394,400

* Discharge measurement made on this day.
d Discharge computed from doubtful gage height record.
Note.—No gage-height record Oct. 31 to Dec. 11, Jan. 11-28, Feb. 1,2,8-9, Feb. 18 to Apr. 13, July 30 to Sept. 30, discharge estimated on basis of recession curves, and comparison with records for Kush Kala River, Helmand River and Arghandab River.

Khash River near Dilaram, Afghanistan
Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2	2	4	7	65	39	908	480	159	21	5	5
2				8	65	39	825	499	149	21	5	5
3				9	65	39	782	480	140	21	5	5
4				10	65	39	739	480	131	18	5	5
5				20	59	33	718	480	122	18	5	5
6				*33	56	33	696	462	112	18	5	5
7				39	52	30	674	632	103	16	5	5
8				33	49	28	653	573	94	16	5	5
9				36	49	49	653	499	84	14	5	5
10				33	44	36	632	*480	84	12	5	5
11				36	39	59	610	450	*89	12	5	5
12				39	39	84	610	425	84	12	5	5
13				39	33	316	592	410	75	12	5	5
14				36	33	25,900	592	395	70	9	5	5
15				36	28	*36,200	573	380	70	*8	5	5
16		*		30	28	26,500	554	365	65	7	5	5
17	*			28	28	12,400	554	365	65	7	5	5
18				26	28	*6,220	536	350	59	7	5	5
19				26	23	*4,210	518	335	54	6	5	5
20				23	*28	*3,250	518	320	54	6	5	5
21				23	28	2,890	499	305	54	6	5	5
22				23	28	2,530	499	275	49	5	5	5
23				26	33	*2,060	480	264	49	5	5	5
24				23	30	1,630	462	254	44	5	*7	4
25				*23	33	1,360	480	243	44	6	5	4
26				23	36	1,210	518	232	44	6	5	4
27				28	33	1,040	499	222	39	6	5	4
28				28	39	962	480	211	33	6	5	5
29				30	-	990	480	189	28	5	5	5
30		2		75	-	1,140	462	179	23	5	5	5
31	2	-	4	70	-	1,020	-	168	-	5	5	-
Total	62	60	124	919	1,136	132,336	17,796	11,402	2,270	321	157	146
Mean	2	2	4	29.6	40.6	4,269	593	368	76.0	10.4	5.1	4.9
Ac-ft	123	119	246	1,820	2,250	262,500	35,300	22,620	4,500	637	311	290

Calendar year 1954: Max 7,260 Min 2 Mean 546 Ac-ft 395,600
Water year 1954-55: Max 36,200 Min 2 Mean 457 Ac-ft 330,720

* Discharge measurement made on this day.

Note.—No gage-height record Oct. 1 to Jan. 5 and May 11; discharge estimated on basis of 2 discharge measurements and known low water condtions. Gage read twice daily, Mar. 20 to May 10, after recorder washed out Mar. 16.

Khash River near Dilaram, Afghanistan
Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	4	4	4	211	545	2,810	1,940	1,080	264	84	140	36
2				444	527	3,030	2,600	1,040	264	75	144	42
3				450	508	9,600	2,530	1,140	254	103	136	44
4				500	499	23,200	2,470	1,210	232	131	122	44
5				908	480	23,200	2,600	1,140	232	144	103	46
6				739	462	19,500	2,740	1,160	254	131	131	44
7				610	434	21,900	3,100	1,120	211	149	*131	42
8				564	434	12,800	3,320	1,080	227	131	108	42
9				518	425	9,760	3,940	1,040	254	140	94	46
10				471	418	7,880	5,160	1,000	211	140	84	36
11				434	410	7,230	6,710	948	189	131	75	23
12				410	402	8,870	5,980	908	164	140	72	20
13			4	388	395	10,100	5,160	674	131	154	70	18
14			400	358	395	15,100	4,410	554	122	159	75	18
15			*718	372	402	18,700	4,030	573	122	168	62	17
16		*	500	518	402	21,300	3,170	601	242	159	54	16
17			400	2,470	395	20,700	2,810	642	116	174	46	16
18			300	*2,890	395	16,400	2,470	696	*189	159	44	15
19			200	2,400	388	7,360	2,100	*718	179	159	42	15
20			*211	1,940	380	3,660	1,830	642	194	179	39	13
21			243	*1,470	380	2,600	1,540	621	184	179	39	13
22			238	1,250	380	3,170	1,340	564	122	144	39	13
23			211	1,080	380	3,660	1,080	518	131	136	36	12
24			270	976	380	4,300	935	450	144	168	33	12
25			211	880	402	6,710	804	444	112	200	44	*10
26			200	782	4,910	7,880	718	425	144	136	59	10
27			206	728	10,100	7,620	642	410	140	103	46	10
28			200	674	*4,210	6,220	573	388	103	108	36	10
29			194	632	3,030	4,950	610	393	98	159	36	10
30		4	189	592	-	3,100	1,100	372	89	179	42	10
31	4	-	227	573	-	1,940	-	222	-	144	36	-
Total	124	120	5,170	27,232	32,868	315,250	78,412	22,773	5,316	4,466	2,218	703
Mean	4	4	166	878	1,130	10,170	2,610	734	171	144	71.5	23.4
Ac-ft	246	238	10,250	54,010	65,190	625,300	155,500	45,170	10,550	8,860	4,400	1,390

Calendar year 1955: Max 36,200 Min 4 Mean 471 Ac-ft 340,960
Water year 1955-56: Max 23,200 Min 4 Mean 1,352 Ac-ft 981,100

* Discharge measurement made on this day.
Note.--No gage-height record Oct. 1 to Dec. 14, Dec. 16-19, Jan. 3, 4, Sept. 30; discharge estimated on basis of discharge measurements and weather.

Khash River near Dilaram, Afghanistan
Discharge, in cubic feet per second, water year October 1956 to September 1957

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	10	30	30	30	1,900	1,540	6,800	13,000	305	372	140	108
2					1,900	1,540	6,600	7,000	298	305	159	98
3					1,900	1,540	6,800	3,500	282	298	160	80
4					1,800	1,630	7,000	2,000	259	254	150	89
5					1,800	1,630	10,000	1,000	243	275	150	89
6				30	1,800	1,680	40,000	800	238	290	140	84
7				35	1,730	1,630	30,000	720	216	282	140	84
8				100	1,630	1,630	15,000	700	189	264	140	80
9				250	1,520	1,730	8,000	700	174	264	131	80
10		30		200	1,450	1,520	7,000	800	168	254	168	52
11		40		190	1,430	2,470	6,500	1,000	164	254	126	46
12				180	1,430	4,500	6,500	800	140	254	140	44
13				190	1,400	3,500	6,600	720	122	248	126	*54
14				2,000	1,400	3,200	6,800	680	103	254	126	52
15	10			1,500	1,400	3,000	7,000	653	84	254	136	42
16	20	*		1,000	1,400	3,100	10,000	653	72	243	68	54
17				500	1,470	45,000	10,000	632	65	222	126	54
18			*	400	1,400	40,000	9,000	653	56	189	117	62
19				350	1,360	25,000	8,000	642	49	184	126	62
20				340	1,360	15,000	7,000	621	39	298	140	54
21				330	1,360	12,000	6,700	592	96	320	131	59
22	*			330	1,360	10,000	6,500	564	108	335	174	59
23				350	1,360	8,500	6,200	527	*388	335	149	49
24				760	1,360	7,500	6,200	480	499	*164	159	49
25		40		2,000	1,360	7,000	6,200	453	554	164	184	44
26		30		*7,880	1,360	6,500	6,200	425	518	164	154	39
27				*6,810	1,360	4,500	6,200	410	462	159	144	39
28				4,620	1,420	8,000	6,200	388	410	149	108	44
29				2,810	-	7,600	6,500	372	350	149	108	36
30		30		2,060	-	7,200	6,000	358	380	131	89	44
31	20	-	30	2,000	-	7,000	-	328	-	159	112	-
Total	470	1,050	930	37,435	42,420	246,640	279,500	42,171	7,031	7,487	4,221	1,830
Mean	15.2	35.0	30.0	1,208	1,515	7,956	9,317	1,360	234	242	136	61.0
Ac-ft	932	2,083	1,845	74,250	84,140	489,200	554,400	83,640	13,950	14,850	8,372	3,630

Calendar year 1956: Max 23,200 Min 10 Mean 1,343 Ac-ft 975,200
Water year 1956-57: Max 45,000 Min 10 Mean 1,839 Ac-ft 1,331,000

* Discharge measurement made on this day.
Note.—No gage-height record Oct. 1 to Jan. 23, Jan. 31 to Feb. 6, Mar. 12 to May 14, Aug. 3-8; discharge estimated on basis of discharge measurements and weather information.

Khash River near Dilaram, Afghanistan
Discharge, in cubic feet per second, water year October 1957 to September 1958

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	52	39	434	275	564	328	592	290	122	206	25	6
2	75	36	425	282	1,410	328	582	290	122	200	25	6
3	39	36	444	264	*1,230	328	545	280	112	194	25	6
4	33	36	434	264	1,060	328	518	270	98	194	24	*6
5	26	42	444	264	948	320	490	270	84	194	22	6
6	33	46	5,440	259	838	320	480	270	84	194	22	5
7	30	42	935	259	782	312	480	270	75	189	20	5
8	22	49	637	254	707	328	480	270	72	189	18	5
9	21	54	462	264	664	365	462	260	72	179	18	5
10	17	52	3,330	635	592	564	444	260	72	179	18	5
11	21	49	2,740	632	592	621	425	260	68	189	*16	5
12	39	46	1,100	554	545	642	410	250	84	174	16	6
13	28	44	771	573	518	621	402	250	131	211	16	6
14	49	46	674	527	490	601	402	250	122	211	15	6
15	46	46	582	490	480	582	372	240	103	*243	15	6
16	44	42	518	462	462	564	372	240	89	350	14	6
17	39	39	462	434	434	564	388	240	80	200	14	6
18	42	39	434	410	418	582	372	240	140	100	12	6
19	44	26	418	410	410	621	365	230	184	80	10	6
20	54	*964	395	410	395	621	350	230	179	70	10	6
21	54	395	372	434	380	621	365	230	179	60	10	6
22	52	243	358	434	402	601	350	220	184	50	8	6
23	52	320	350	410	350	621	328	220	179	40	8	6
24	46	380	335	410	342	564	320	210	168	35	8	6
25	*46	365	*320	402	342	*527	312	210	184	33	8	6
26	44	328	320	418	350	518	305	*194	184	32	6	6
27	39	328	312	418	342	545	312	184	179	32	6	6
28	39	471	305	410	335	728	305	168	189	32	6	6
29	39	462	305	410	-	990	290	122	200	31	6	6
30	36	444	298	410	-	750	290	149	194	31	6	6
31	36	-	290	402	-	632	-	131	-	30	6	-
Total	1,237	5,509	24,644	12,480	16,382	16,637	12,108	7,198	3,933	4,152	433	174
Mean	39.9	184	795	403	585	537	404	232	131	134	14.0	5.8
Ac-ft	2,454	10,930	48,880	24,750	32,490	33,000	24,020	14,280	7,801	8,235	859	345

Calendar year 1957: Max 45,000 Min 17 Mean 1,907 Ac-ft 1,389,000
Water year 1957-58: Max 5,440 Min 5 Mean 287 Ac-ft 208,000

* Discharge measurement made on this day.
Note.--No gage-height record Apr. 30 to May 25, July 16-30; discharge estimated on basis of discharge measurements, weather and records for Farah River at Farah.

Khash River at Dilaram, Afghanistan
Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	8.5	16	31	47	142	2,290	2,160	1,000	302	75	25	7.4
2	8.5	16	31	47	135	4,580	2,220	930	295	75	23	7.4
3	8.5	17	31	53	130	4,580	2,870	895	288	71	21	7.4
4	8.5	17	38	61	130	3,200	2,870	860	325	67	19	7.4
5	8.5	17	38	69	135	*2,650	2,870	825	325	67	19	7.4
6	7.4	18	38	65	130	2,430	2,840	790	310	67	17	7.4
7	7.4	18	38	61	126	2,240	2,520	764	265	63	17	7.4
8	7.4	18	38	53	122	1,890	2,490	720	250	59	16	7.4
9	7.4	21	38	53	118	2,930	2,540	699	228	59	15	7.4
10	7.4	21	38	50	151	4,680	2,490	660	212	56	14	7.4
11	7.4	21	36	50	600	4,300	2,380	647	198	56	11	7.4
12	7.4	21	50	50	464	3,280	2,220	621	190	52	11	7.4
13	7.4	22	50	47	374	2,500	2,100	608	170	52	11	7.4
14	7.4	22	80	47	318	2,070	2,060	608	160	48	10	7.4
15	7.4	22	72	61	272	1,760	2,000	634	155	44	10	7.4
16	7.4	24	65	57	245	1,640	1,950	673	145	44	10	7.4
17	7.4	24	57	72	257	1,520	1,840	1,070	140	36	8.6	5
18	*7.4	24	57	365	1,030	1,390	1,740	1,070	135	36	8.6	5
19	7.4	24	57	84	660	1,330	1,630	790	135	36	8.6	5
20	8.5	25	57	*84	515	1,300	1,540	660	130	34	8.6	5
21	8.5	25	65	96	481	1,250	1,580	582	125	*36	8.6	5
22	9.6	25	65	92	464	1,280	1,900	530	125	36	8.6	5
23	9.6	*28	65	92	481	1,220	1,740	510	125	34	8.6	*4.8
24	12	28	65	503	498	1,100	1,490	468	120	32	8.6	5
25	12	28	61	464	464	925	1,360	*448	115	32	8.6	5
26	13	28	57	332	464	760	1,230	428	110	32	8.6	5
27	13	28	53	272	515	583	1,120	418	105	30	8.6	5
28	14	28	53	277	583	2,280	1,040	386	95	30	8.6	5
29	14	31	53	194	-	3,360	1,040	356	90	28	8.6	5
30	15	31	50	174		*2,870	1,040	336	80	28	8.6	5
31	15	-	47	154	-	2,430	-	318	-	25	8.6	-
Total	290.3	688	1,547	4,126	10,004	70,618	58,870	20,304	5,448	1,440	378	188.2
Mean	9.4	22.9	49.9	133	357	2,278	1,960	655	182	46.4	12.2	6.27
Ac-ft	576	1,360	3,070	8,170	19,840	140,070	116,770	40,270	10,810	2,860	750	373

Calendar year 1958: Max 1,410 Min 5 Mean 208 Ac-ft 150,800
Water year 1958-59: Max 4,680 Min 4.8 Mean 476 Ac-ft 344,900

* Discharge measurement made on this day.
Note.--Gage-heights estimated June 18 to July 20 when float was disengaged. No rainfall in period.

HELMAND RIVER BASIN

Kash River at Dilaram, Afghanistan
Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	5.0	8.6	578	185	136	188	1,470	2,940	520	144	47	9
2	5.0	8.6	2,970	176	130	185	1,470	2,620	510	139	47	9
3	5.0	8.6	*825	170	126	188	1,490	2,330	500	134	44	9
4	5.0	8.6	384	164	126	188	1,450	2,080	490	129	42	9
5	5.0	8.6	*295	164	123	212	1,450	1,900	480	129	39	8
6	5.0	8.6	238	164	123	242	1,360	1,760	470	124	36	8
7	5.0	8.6	198	160	120	250	1,300	1,690	450	114	36	8
8	5.0	8.6	179	157	120	238	1,340	1,580	440	108	33	8
9	5.0	12	160	157	120	224	1,380	1,580	420	98	30	8
10	5.0	16	157	157	120	216	1,320	1,540	400	98	28	8
11	5.0	19	151	157	123	212	1,200	1,450	390	88	28	8
12	5.0	21	145	157	123	604	1,140	1,360	380	88	26	8
13	5.0	23	136	157	126	2,270	1,340	1,300	360	85	24	8
14	5.0	25	133	154	130	1,320	1,850	1,300	350	82	23	8
15	5.0	28	164	151	142	*1,400	2,430	1,140	330	79	23	8
16	5.0	28	268	145	176	1,320	*7,250	1,070	310	76	21	8
17	5.0	28	220	142	203	1,160	8,300	965	290	74	21	8
18	5.0	28	194	139	212	1,070	8,000	860	280	71	19	8
19	5.0	28	188	139	203	1,000	6,530	840	260	71	19	8
20	5.0	30	191	*136	198	930	5,850	800	250	71	19	8
21	5.0	32	203	133	188	860	5,100	780	230	71	16	7
22	5.0	32	212	133	188	790	4,500	760	220	70	14	7
23	5.0	32	216	130	188	736	4,400	730	210	68	12	7
24	5.0	*30	212	128	185	693	4,020	710	200	67	12	7
25	5.0	28	208	128	185	682	3,660	690	180	*65	11	7
26	5.0	30	198	126	182	747	3,470	660	175	65	11	6
27	5.0	2,300	203	123	185	2,220	3,090	640	165	59	11	6
28	5.0	639	194	126	*188	1,850	2,900	610	160	59	11	6
29	5.0	359	194	130	188	1,690	3,020	580	*159	53	10	6
30	5.0	308	191	142	-	1,600	3,020	560	154	53	10	6
31	5.0	-	188	139	-	1,520		540	-	50	-	-
Total	155	4,144.8	9,993	4,569	4,557	26,805	95,100	38,365	9,733	2,682	732	229
Mean	5	138	322	147	157	865	3,170	1,238	324	86.5	23.6	76.3
Ac-ft	310	8,220	19,820	9,060	9,040	53,170	188,600	76,100	19,310	5,320	1,450	455

Calendar Year 1959: Max 4,680 Min 4.8 Mean 509 Ac-ft 368,300
Water year 1959-60: Max 8,300 Min 5 Mean 538 Ac-ft 390,900

* Discharge measurement made on this day.

Note.—No gage-height record May 19 to June 29, July 22-24, Sept. 21-30; discharge estimated on basis of recorded range in stage and records for Farah River at Farah.

FARAH RIVER BASIN

Farah River near Farah, Afghanistan

Location.— Lat 32° 20' N., long 62° 00' E., on downstream side of highway bridge on Farah to Herat road, 8 kilometers southwest of Farah and about 130 kilometers upstream from Hamun-i-Sabari in the Chakansur-Seistan basin.

Drainage area.— 10,400 sq mi, approximately, from Survey of India base maps.

Records available.— April 1953 to September 1960.

Gage.— Water-stage recorder. Altitude of gage is about 760 meters. Prior to July 14, 1958, staff gages about 300 meters upstream at datum 0.55 meters higher.

Average discharge.— 8 years (1952-60) 1,705 cfs (1,235,490 acre-ft per year).

Extremes.— Maximum and minimum discharges for the water years 1953 to 1960 are contained in the following table:

Water Year	Maximum			Minimum Daily	
	Date	Gage Height (meters)	Discharge (cfs)	Date	Discharge (cfs)
1953	Apr. 11, 1953	5.75	74,300	Many days	2
1954	Feb. 10, 1954	5.35	65,000	Many days	2
1955	Mar. 14, 1955	5.85	76,800	Many days	2
1956	Mar. 5, 1956	-	b78,000	Sept. 23-30, 1956	1
1957	Mar. 17, 1957	-	ac40,000	Many days	1
1958	Mar. 29, 1958	2.22	6,010	Sept. 3,4,7, 1958	1.5
1959	Mar. 29, 1959	3.10	26,000	Many days	2
1960	Apr. 17, 1960	3.51	38,400	Sept. 16-30, 1960	1

a Mean daily discharge.
b Slope-area measurement.
c Estimated.

Remarks.— Records good except those for periods of no gage-heights or flows below 10 cfs which are poor. Many diversions for irrigation upstream.

Farah River near Farah, Afghanistan
Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1							1,000	1,020	630	446	2	2
2								1,080	12,000	446		
3								1,050	4,600	446		
4								993	2,680	425		
5								993	2,000	400		
6								993	1,730	350		
7								966	1,420	300		
8							1,000	858	1,100	250		
9							1,500	750	850	200		
10							2,680	654	750	160		
11							51,800	600	750	120		
12							33,700	560	726	100		
13							22,200	530	702	70		
14							18,700	*509	678	50		
15							13,000	488	678	40		
16							*9,500	425	581	30		
17							*6,800	384	581	20		
18							5,400	363	581	10		
19							4,160	342	557	*2		
20							3,180	300	557			
21							2,480	265	557			
22							2,230	230	557			
23							2,050	199	557			
24							1,910	199	509			
25							1,730	199	509			
26							1,570	199	509			
27							1,500	199	488			
28							1,340	804	488			
29							1,280	1,020	467			
30							1,120	885	467			2
31								726		2	2	
Total	25	25	151	504	75,625	30,250	197,830	18,783	39,259	3,889	62	60
Mean							6,594	606	1,309	125	2	2
Ac-ft	50	50	300	1,000	150,000	60,000	392,400	37,260	77,870	7,710	123	119

Calendar year 1952: Max - Min - Mean - Ac-ft -
Water year 1952-53: Max 51,800 Min 2 Mean 1004 Ac-ft 726,900

* Discharge measurement made on this day.
Note.— No gage-heights Oct. 1 to Apr. 9, July 5-18, July 20 to Sept. 30; discharge estimated on basis of records for Khash River near Dilaram and observed flows.

Farah River near Farah, Afghanistan
Discharge, in cubic feet per second, water year October 1953 to September 1954

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2	2	2	9	9	2,200	5,000	6,100	8,580	450	25	2
2				9		1,900	7,000	6,000	8,580	400		
3				15		1,600	10,000	5,800	8,580			
4				60		1,400	15,000	5,600	4,550	400		
5				1,000	9	1,300	19,000	5,500	4,550	350	25	
6				600	10	1,200	20,000	5,400	4,550		10	
7			2	300	15	1,100	21,000	5,300	3,030	350		
8			4	150	20	1,000	20,000	5,200	3,030	300		
9				60	135	1,000	18,000	5,100	2,770			
10				30	*57,300	1,200	16,000	5,000	2,770	300	10	
11				20	50,000	1,500	14,000	4,900	2,770	250	5	
12			4	15	45,000	1,800	12,000	4,800	2,530			
13			10	10	40,000	1,900	10,000	4,700	2,530	250		
14			10	6	37,000	2,100	9,000	*4,520	2,530	200		
15			8	5	25,000	2,800	8,400	4,410	2,300		5	
16			115		18,000	4,000	7,900	4,410	2,300	200	3	
17			16		13,000	5,200	7,600	4,410	2,210	150		
18			2		11,500	6,600	7,400	4,090	1,890			
19			25		11,000	8,400	7,200	4,090	1,200	150		
20			45		10,000	10,000	7,100	4,090	916	*117		
21			37		8,600	12,000	7,000	3,510	442	115		
22			29		7,000	14,000	7,000	2,930	*562	115		
23			16	5	6,000	15,000	6,900	2,930	550	100		
24			9	6	5,000	15,000	6,800	2,930				
25				8	4,200	13,000	6,700	2,720	550	100		
26				10	3,500	*10,400	6,600	2,720	500	75		
27				30	3,000	7,500	6,500	2,720				
28				100	2,600	5,400	6,400	2,260	500	75		
29				600	-	4,600	6,300	2,260	450	50		
30		2		200	-	4,200	6,200	2,720	450		*3	2
31	2	-	9	80	-	4,000		8,490		50	3	
Total	62	60	419	3,363	357,925	163,300	308,000	135,610	77,220	6,422	248	60
Mean	2	2	13.5	108	12,780	5,268	1,027	4,375	2,574	207	8.0	2
Ac-ft	123	119	831	6,670	709,900	323,900	610,900	269,000	153,200	12,740	492	119

Calendar year 1953: Max 51,800 Min 2 Mean 1,002 Ac-ft 727,500
Water year 1953-54: Max 57,300 Min 2 Mean 2,884 Ac-ft 2,088,000

* Discharge measurement made on this day.
Note.— Gage-heights fragmentary and rough all year; discharge estimated on basis of 5 discharge measurements, one slope-area measurement and records for Khash River Dilaram.

Farah River near Farah, Afghanistan
Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2	2	4	5	235	155	2,800	1,000	785	19	3	6
2				5	207	140	2,320	1,000	785	16		6
3				5	214	135	2,150	1,030	685	16		6
4				51	155	140	1,850	986	568	12		6
5				43	145	130	1,700	1,020	516	10		5
6				75	145	107	1,580	1,040	474	10		3
7				140	140	35	1,560	1,400	484	9		3
8				207	135	10	1,520	1,300	452	9		
9		2		276	135	12	1,460	1,300	*432	10		
10		2		318	115	12	1,240	1,170	350	9		
11		2		200	57	2,250	986	1,120	310	9		
12		3		140	172	7,080	1,060	1,040	284	9		
13		4		140	292	*5,050	1,760	1,030	276	8		
14		5		115	334	*49,700	1,760	874	260	*6		
15		5	4	115	228	55,100	1,620	848	221	5	3	
16		*4	5	111	221	34,500	1,440	810	155	5	3	
17		3		99	221	11,300	1,340	810	125	5		
18	*2	3		99	214	*9,800	1,200	810	115	5		
19	2	3		91	193	6,860	1,110	810	111	4		
20	5	3		75	*200	8,180	1,000	810	99	4		
21	5	2		95	186	8,400	944	785	83	3		
22	4	2		111	172	*5,700	944	785	75	3		
23	2	3		75	193	5,100	972	785	69	3		
24		2		72	207	4,000	930	760	63	3	*	
25		2		69	155	3,770	930	760	63			
26		2		*69	160	3,030	916	785	51			
27		3		69	165	2,300	944	760	35			
28		4		135	165	2,130	944	760	29			
29		3		130	-	2,580	972	785	25			3
30		3		165	-	3,280	972	785	25			9
31	2	-	5	200	-	3,000	-	772	-	3	3	-
Total	70	81	140	3,500	5,161	233,986	40,924	28,730	8,005	213	93	110
Mean	2.3	2.7	4.5	113	184	7,548	1,364	927	267	6.9	3	3.7
Ac-ft	139	161	278	6,942	10,240	464,100	81,170	56,980	15,880	422	184	218

Calendar year 1954: Max 57,300 Min 2 Mean 2,883 Ac-ft 2,087,000
Water year 1954-55: Max 55,100 Min 2 Mean 880 Ac-ft 636,600

* Discharge measurement made on this day.

Farah River near Farah, Afghanistan
Discharge, in cubic feet per second, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	69	2	5	145	698	4,820	10,400	9,700	334	318	179	18
2	125			160	622	4,030	14,000	9,400	334	284	165	20
3	6			1,330	600	3,960	12,500	9,200	350	214	155	19
4	7			1,460	568	8,310	9,900	8,700	350	200	155	18
5	6			1,140	526	*35,000	10,600	8,200	334	179	155	12
6	3		5	810	494	18,700	14,300	7,600	334	160	155	5
7	2		6	822	463	15,500	21,700	6,800	334	135	*145	4
8			5	622	392	12,900	25,000	6,000	334	6,370	165	4
9			7	558	342	9,900	30,000	5,400	334	5,360	165	4
10			45	536	326	8,040	37,000	4,800	358	2,210	165	4
11			2,390	442	268	7,380	50,000	4,000	350	474	135	3
12			2,010	400	260	6,740	42,000	3,300	350	547	135	3
13			1,460	367	252	6,330	36,000	2,500	350	326	130	3
14		*	2,770	292	235	6,210	30,000	1,900	350	172	125	3
15			5,700	494	235	6,820	26,000	1,500	350	2,320	115	3
16			1,890	568	235	6,530	23,000	1,000	350	2,240	99	3
17			860	17,300	235	5,360	19,000	800	452	2,170	99	2
18			610	8,040	221	4,890	17,000	540	410	2,260	91	2
19			400	5,550	160	21,800	15,000	420	*400	7,420	91	2
20			1,330	3,830	135	16,800	13,000	326	392	2,320	87	2
21			1,000	2,260	135	14,400	11,000	310	367	1,110	69	2
22			*860	2,130	135	14,900	10,000	635	367	284	69	2
23			635	1,780	135	12,500	9,000	2,280	367	235	66	1
24		2	474	1,450	135	12,800	8,400	848	410	235	63	1
25		3	376	1,360	179	13,700	7,600	660	589	484	51	*1
26		4	252	1,270	193	10,400	6,800	547	589	292	37	1
27		5	244	1,160	5,650	8,720	6,200	334	589	600	31	1
28		6	172	930	5,740	7,590	5,600	334	589	342	24	1
29		8	150	902	5,180	7,680	7,000	334	547	228	22	1
30		6	140	810	-	8,260	10,000	334	494	214	22	1
31	2	-	135	722	-	9,400		334	-	193	20	
Total	266	80	23,950	59,640	24,750	330,370	538,000	99,040	12,060	39,896	3,185	146
Mean	8.6	2.7	773	1,924	853	10,660	17,930	3,195	4,020	1,287	103	4.9
Ac-ft	528	159	47,500	118,300	49,090	655,300	1,067,000	196,400	23,920	79,130	6,317	290

Calendar year 1955: Max 55,100 Min 2 Mean 945 Ac-ft 684,200
Water year 1955-56: Max 50,000 Min 1 Mean 3,091 Ac-ft 2,244,000

* Discharge measurement made on this day.
Note.— No gage-height record Apr. 8 to May 19, Sept. 22-30; discharge estimated on basis of records for Khash River at Dilaram.

Farah River near Farah, Afghanistan
Discharge, in cubic feet per second, water year October 1956 to September 1957

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1	3	13	252	2,210	2,560	6,800	7,200	480	1,540	568	221
2			13	252	2,510	2,600	6,900	5,000	460	1,430	516	221
3			16	252	2,560	2,600	7,000	2,500	430	1,360	494	221
4			16	252	3,120	2,560	7,400	1,300	400	1,300	474	221
5			18	252	5,550	2,560	12,000	1,000	380	1,270	463	214
6			19	252	4,150	2,580	30,000	950	350	1,140	463	207
7			20	252	2,530	2,620	28,000	920	330	1,070	463	207
8			29	252	2,560	2,670	17,000	900	300	1,060	432	207
9			31	252	2,420	2,640	10,000	900	270	1,060	421	207
10			51	252	2,320	2,580	9,000	900	250	1,060	410	207
11			57	252	2,260	2,530	8,700	900	230	1,040	400	207
12			57	384	2,150	2,490	8,400	900	220	1,030	400	207
13			63	318	1,660	2,440	8,200	900	200	1,030	392	207
14			69	301	1,600	2,440	7,900	900	200	1,030	384	*207
15	1		83	284	3,830	3,000	7,700	900	190	1,000	384	207
16	2		83	284	2,240	7,000	7,400	880	180	986	384	207
17		*	83	276	2,130	40,000	7,200	860	170	944	358	207
18			91	252	2,130	35,000	7,100	820	150	944	334	207
19			91	252	2,150	27,000	7,000	770	130	916	326	207
20			91	4,150	2,170	20,000	6,800	720	120	916	292	207
21			91	8,490	1,780	13,000	6,600	680	1,000	772	276	207
22			95	8,720	1,760	11,000	6,500	640	1,600	748	268	207
23			160	7,860	1,720	9,000	6,400	600	1,780	735	268	207
24			252	6,330	1,700	7,600	6,300	580	1,780	*685	260	207
25			252	5,740	1,670	7,100	6,200	560	1,780	635	252	207
26			235	4,360	2,090	6,900	6,200	540	1,780	622	252	214
27			244	3,250	2,260	6,800	6,200	530	1,780	589	252	221
28			252	2,880	2,370	6,800	6,400	520	1,780	589	244	207
29			252	2,670		6,800	7,000	510	1,740	589	235	179
30		3	252	2,490		6,800	8,000	510	1,680	589	235	179
31	2		252	2,320		6,800		500		589	221	
Total	47	90	3,331	64,883	67,600	256,470	276,300	36,290	22,140	29,268	11,121	6,238
Mean	1.5	3	108	2,093	2,414	8,273	9,210	1,171	738	944	359	208
Ac-ft	93	179	6,607	128,700	134,100	508,700	548,000	71,980	43,910	58,050	22,060	12,370

Calendar year 1956: Max 50,000 Min 1 Mean 3,043 Ac-ft 2,203,000
Water year 1956-57: Max 40,000 Min 1 Mean 2,120 Ac-ft 1,535,000

* Discharge measurement or field estimate made on this day.

Note.— No gage-height record Oct. 1 to Nov. 30, Mar. 15 to June 22; discharge estimated on basis of records for Khash River at Dilaram and discharge measurements.

FARAH RIVER BASIN

Farah River near Farah, Afghanistan
Discharge, in cubic feet per second, water year October 1957 to September 1958

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	150	62	350	221	568	494	2,320	3,190	760	33	4.2	1.6
2	110	63	360	221	3,770	442	1,970	3,190	760	33	4.2	1.6
3	80	66	360	207	3,620	421	1,640	2,300	748	33	3.8	1.5
4	70	68	360	193	2,770	410	1,780	2,210	672	37	3.2	*1.5
5	60	70	360	179	2,090	400	1,740	1,950	648	20	3.0	1.6
6	52	72	1,500	63	1,660	400	1,670	1,810	600	22	3.0	1.6
7	46	74	1,800	99	1,420	358	1,760	1,700	505	19	3.0	1.5
8	40	76	2,000	103	1,300	318	2,210	1,680	474	19	3.2	1.6
9	36	78	1,900	107	1,160	301	2,210	1,600	463	19	3.0	1.6
10	35	80	1,700	95	1,040	848	1,850	1,530	318	19	2.8	1.6
11	40	78	1,400	358	888	1,340	1,640	1,530	318	19	2.8	1.6
12	52	77	1,000	463	810	1,430	1,540	1,520	276	18	*2.8	1.6
13	58	76	800	400	772	1,600	1,530	1,500	214	16	2.8	1.8
14	62	75	680	392	698	1,260	1,440	1,430	179	*14	2.8	1.8
15	66	73	560	326	648	1,160	1,340	1,340	165	14	2.5	1.8
16	69	70	480	276	600	930	1,540	1,330	160	14	2.1	1.8
17	72	67	420	228	578	848	1,810	1,330	155	14	2.1	1.9
18	74	65	380	155	568	835	2,010	1,300	145	14	2.1	1.9
19	76	64	350	130	568	1,000	1,990	1,260	140	10	2.1	1.9
20	77	350	330	221	568	1,110	1,830	1,220	125	11	2.0	2.0
21	78	300	310	916	547	1,110	1,810	1,170	103	11	2.0	2.0
22	78	280	300	735	536	1,110	1,720	1,080	99	9.4	2.1	2.0
23	78	280	290	735	526	1,110	1,640	1,030	83	8.8	2.1	2.2
24	*78	280	280	668	526	1,110	1,480	1,030	83	8.8	2.0	2.2
25	76	290	270	547	526	1,110	1,810	860	83	7.4	2.0	2.2
26	72	300	260	505	526	1,110	1,740	1,030	69	5.8	1.9	2.4
27	69	310	250	558	526	1,140	1,800	1,030	54	5.2	1.8	2.3
28	66	320	245	735	526	4,920	1,760	1,000	107	5.1	1.7	2.2
29	64	330	240	735	494	5,850	1,720	1,000	41	5.1	1.8	2.2
30	63	350	235	432	-	3,480	3,480	860	33	5.0	1.7	2.2
31	62	-	230	568	-	3,250	-	785	-	5.2	1.6	-
Total	2,109	4,744	20,000	11,571	30,829	41,205	54,780	45,795	8,580	474.8	78.2	55.7
Mean	68.0	158	645	373	1,063	1,329	1,826	1,477	286	15	2.52	1.86
Ac-ft	4,183	9,410	39,670	22,950	61,150	81,730	108,600	90,830	17,020	948	155	110

Calendar year 1957: Max 40,000 Min 35 Mean 2,184 Ac-ft 1,581,000
Water year 1957-58: Max 5,850 Min 1.5 Mean 602 Ac-ft 436,800

* Discharge measurement made on this day.
Note.--No gage-heights Oct. 1 to Dec. 31; discharge estimated on basis of records for Khash River at Dilaram.

Farah River near Farah, Afghanistan
Discharge, in cubic feet per second, water year October 1958 to September 1959

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2	2	2	16	510	1,290	7,710	3,010	1,230	318	4	3
2				16	480	13,700	6,980	2,830	1,260	214		
3				14	460	9,550	7,520	2,740	1,200	49		
4				14	440	5,560	7,650	2,560	1,150	14		
5				13	450	*4,340	6,680	2,520	1,320	12		
6				16	480	4,200	6,100	2,470	1,430	10		
7				17	470	3,910	5,660	2,380	1,380	16		
8				17	420	3,670	5,380	2,290	1,320	14		
9				15	370	3,420	5,220	2,160	1,200	12		
10	2	2	2	14	340	8,010	5,330	2,060	1,150	70		
11	2	2	2	13	544	7,280	5,330	1,990	1,150	76		
12			2	12	946	5,150	5,220	1,920	1,090	96		
13			960	10	791	4,820	5,060	1,840	1,010	122		
14			688	10	688	3,830	4,900	1,880	977	96		
15			460	10	628	3,540	4,600	1,770	948	90		
16			360	10	568	3,380	4,400	1,770	920	63		
17			298	*10	544	3,270	4,250	2,060	977	14		
18	*		241	13	520	3,190	4,150	2,420	948	10		
19			183	12	1,190	3,120	4,050	2,130	920	4		
20	2	2	138	10	994	3,120	3,860	1,950	948	8		
21	2	2	104	18	915	3,160	4,100	1,840	878	8		
22			95	20	838	3,340	5,600	1,740	815	*2		
23		*	70	32	822	3,630	4,600	1,630	794			
24			60	1,480	868	3,710	4,400	1,560	668			
25			50	1,830	930	3,630	4,100	*1,460	521			
26			38	1,170	884	3,630	3,730	1,430	521			
27			32	915	868	3,590	3,460	1,430	416			
28			23	776	915	15,430	3,280	1,380	360			
29			20	688	-	20,790	3,190	1,320	388			
30		2	18	616	-	12,590	3,100	1,320	332			3
31	2	-	16	556	-	*9,100	-	1,290	-	5	4	-
Total	62	60	3,878	8,363	18,873	180,950	149,610	61,150	28,221	1,366	124	90
Mean	2	2	125	270	674	5,837	4,987	1,973	941	44	4	3
Ac-ft	123	119	7,692	16,590	37,430	358,900	296,700	121,300	55,980	2,709	246	179

Calendar year 1958: Max 5,850 Min 1.5 Mean 541 Ac-ft 391,500
Water year 1958-59: Max 20,790 Min 2 Mean 1,240 Ac-ft 898,000

* Discharge measurement made on this day.
Note.—Discharge for Oct. 1 to Dec. 12, July 22 to Sept. 30 estimated on basis of field estimates and record of stages.

Farah River near Farah, Afghanistan
Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3	4	878	899	6	542	4,000	7,400	2,920	276	2	2
2			2,270	780	6	472	3,640	7,400	2,830	262		
3			*3,820	700	2,400	416	3,370	8,260	2,650	248		
4			*1,430	620	4,100	360	3,100	8,500	2,560	220		
5			920	520	2,000	1,030	3,010	8,010	2,560	207		
6			752	450	1,780	1,490	2,650	7,280	2,420	194		
7			584	380	1,650	1,030	2,470	6,810	2,380	181		
8			416	330	1,500	878	2,380	6,340	2,290	168		
9			346	280	1,450	752	2,380	5,880	2,200	155		
10			304	240	1,400	710	2,380	5,660	2,060	142		
11			262	210	1,360	626	2,130	5,440	1,990	142		
12			318	190	1,320	626	2,130	5,330	1,920	129		
13			304	170	1,280	4,900	14,100	5,220	1,700	116		
14			290	150	1,240	6,220	13,800	5,000	1,490	103		
15		4	388	140	1,200	*4,900	15,200	5,000	1,320	90		2
16		5	486	125	1,160	3,820	12,100	4,900	1,090	76		1
17			626	110	1,120	3,190	*28,000	4,800	977	63		
18			773	105	1,080	2,470	*26,000	4,800	878	49		
19			836	95	1,040	1,990	21,200	4,800	836	36		
20			977	90	1,000	1,770	16,900	4,600	710	22		
21			1,120	83	960	1,490	13,800	4,500	710	18		
22			1,060	76	930	1,320	12,700	4,300	584	14		
23			1,060	*76	900	1,150	12,900	4,100	584	10		
24			1,120	63	870	1,030	11,000	3,960	472	6		
25		*5	1,180	49	*836	920	9,700	3,820	416	*2		
26		5	1,180	10	710	4,880	8,800	3,640	332	2		
27		4,230	1,090	6	*668	19,500	8,260	3,500	304	2		
28		3,920	1,060	6	626	9,700	7,770	3,370	*332	2		
29		1,460	977	6	584	6,810	7,520	3,280	318	2		
30		1,030	977	6		5,440	7,400	3,100	304	2		1
31	3	3	920	6		4,700		3,010		2	2	
Total	93	10,755	28,724	6,971	35,176	95,132	280,790	162,010	42,137	2,941	62	45
Mean	3	358	927	225	1,213	3,069	9,360	5,226	1,405	94.9	2	1.5
Ac-ft	184	21,330	56,970	13,830	69,770	188,700	556,900	321,300	83,580	5,833	123	89

Calendar year 1959: Max 20,790 Min 3 Mean 1,338 Ac-ft 968,500
Water year 1959-60: Max 28,000 Min 1 Mean 1,816 Ac-ft 1,319,000

* Discharge measurement made on this day.

Note.—Doubtful or no gage-height record Jan. 16-21, Feb. 3-24; discharge estimated on basis of recorded range in stage, discharge measurements and records for Khash River at Dilaram. Discharge for Oct. 1 to Nov. 26, July 25 to Sept. 30 estimated on basis of measured discharge in irrigation ditch in river channel.

Baba Wali Canal near Kandahar, Afghanistan

Location.—Lat 31° 39' N., long 65° 39' E., at south end of South Canal where South Canal divides its water between the Tarnak and Baba Wali Canals; about 13 kilometers northwest of Kandahar.

Discharge measurements are those made near point of diversion; some on the South Canal bridge are corrected for diversion into Tarnak Canal.

Date	Width (feet)	Area (sq-ft)	Velocity (ft/sec)	Gage Height (meters)	Discharge (cfs)
Apr. 1, 1958	18.0	12.8	1.98	5.045	24.1
Apr. 1	18.0	13.6	1.76	5.016	24.0
Apr. 8	20.0	179	2.22	5.80	397
May 12	22.0	195	2.06	5.955	402
May 13	71.0	365	1.42	6.16	517
May 13	74.0	395	1.62	6.33	640
June 5	24.0	36.8	3.49	5.39	128

Boghra Canal near Girishk, Afghanistan

Location.—Lat. 31° 54' N., long 64° 44' E., 3 kilometers southwest of Girishk. Diversion is from Helmand River about 8 kilometers upstream from Girishk and wasteway No. 1 is at 10 + 917 meters below the diversion.

Discharge measurements are those made above wasteway No. 1 and represent the diversion water.

Date	Width (feet)	Area (sq-ft)	Velocity (ft/sec)	Gage Height (meters)	Discharge (cfs)
Mar. 16, 1954	68.8	74.5	1.25	0.13	93.3
Mar. 16	89.9	112	2.02	0.25	228
Mar. 16	93.0	158	2.79	0.37	441
Mar. 16	92.0	202	3.73	0.56	755
Mar. 16	99.0	251	4.10	0.69	1,030
Mar. 16	99.5	313	4.60	0.88	1,420
Mar. 18	98.0	264	4.32	0.78	1,140
Mar. 18	106	416	4.99	1.16	2,080
July 16	98.0	238	3.76	0.67	892
Sept. 6	101	243	3.51	0.77	853
Oct. 6	98.0	276	3.49	0.78	958
Nov. 11	97.0	253	3.36	0.68	806
Dec. 8, 1954	94.0	143	3.32	0.44	472
Dec. 9	92.0	116	3.02	0.37	351
Dec. 21	92.0	218	3.26	0.58	710
Jan. 17, 1955	58.0	24.2	0.06	0.0	15.8
Feb. 25	91.0	250	3.75	0.70	938
May 5	94.0	266	4.06	0.79	1,080
July 13	94.0	259	3.60	0.78	941
Aug. 11	91.0	260	3.56	0.80	928

Boghra Canal near Girishk, Afghanistan (Continued)

Date	Width (feet)	Area (sq-ft)	Velocity (ft/sec)	Gage Height (meters)	Discharge (cfs)
Oct. 6, 1955	91.0	236	3.48	0.75	819
Nov. 27	87.0	206	3.37	0.64	694
Dec. 15	98.0	169	2.40	0.42	406
Feb. 2, 1956	90.0	107	2.65	0.34	284
June 5	92.0	250	3.87	0.75	968
Sept. 16	92.0	275	3.89	0.80	1,070
Dec. 9	89.0	219	4.18	0.74	915
Feb. 19, 1957	77.0	97.9	3.27	0.35	346
May 26	96.0	215	3.72	0.70	801
May 26	88.0	183	3.62	0.60	663
May 27	93.0	285	3.82	0.80	1,030
Sept. 23	84.0	185	4.24	0.70	785
Oct. 19	93.0	247	4.35	0.75	1,080
Feb. 25, 1958	98	410	3.00	0.585	1,240
Feb. 25	98	345	3.58	0.498	1,240
Feb. 27	101	449	4.34	0.78	1,950
Feb. 27	100	396	3.81	0.735	1,510
July 31	89	242	4.33	0.69	1,050
Apr. 14, 1959	91	267	4.84	0.74	1,290
Apr. 18	92	240	4.50	0.70	1,080
Apr. 19	88	168	3.91	0.48	657
Apr. 19	76	124	3.10	0.285	384
Apr. 19	78	60.3	2.04	0.10	123
Apr. 25	91	249	5.38	0.76	1,340
Apr. 25	90	253	5.38	0.76	1,360
Apr. 26	94	265	5.28	0.76	1,400
Apr. 26	95	277	5.34	0.80	1,480
Apr. 26	87	171	4.72	0.49	737
Apr. 26	81	87.3	2.86	0.185	250
Apr. 18, 1960	94	581	2.52	*3.45	1,460

* At Wasteway No. 1.

Boghra Canal below Wasteway No. 1 near Girishk, Afghanistan

Location.--Lat 31° 48' N., long 64° 51' E., about 12 kilometers downstream from diversion dam 3 kilometers southwest of Girishk and below gated control dam at Wasteway No. 1.
Discharge measurements were made from a flume over the canal about 300 meters downstream or by wading.

Date	Width (feet)	Area (sq-ft)	Velocity (ft/sec)	Gage Height (meters)	Discharge (cfs)
Oct. 30, 1957	97.0	388	3.01	1.35	1,170
Oct. 1, 1959	91.5	147	1.46	0.44	216
Mar. 24, 1960	93.0	313	2.88	1.08	900
Apr. 18	89.5	208	2.69	1.368	560
May 9	96.5	342	3.20	1.17	1,098
Aug. 16	97.0	395	3.13	1.92	1,230

MISCELLANEOUS DISCHARGE MEASUREMENTS

Darweshan Canal at Diversion Dam near Darweshan, Afghanistan

Location.—Lat 31° 08' N., long 64° 07' E., below diversion gates at left side of Helmand River 6.2 kilometers upstream from Darweshan bridge.

Discharge measurements made by wading or from bridged gate section 3.5 kilometers downstream.

Date	Width (feet)	Area (sq-ft)	Velocity (ft/sec)	Gage Height (meters)	Discharge (cfs)
Mar. 10, 1959	34	93.7	0.57	5.21	53.2
Apr. 19	23.1	162	2.12	6.50	344
Apr. 20	23.1	150	1.60	6.30	240
Apr. 20	23.1	173	3.29	6.88	573
June 10	56	60.6	1.32	5.775	74.1
July 12	23.2	160	1.65	6.42	264
Aug. 15	23.1	169	1.79	6.42	302
Sept. 30	23.1	161	1.73	6.32	278
Oct. 12	23.0	175	1.71	6.35	300
Dec. 24	23.1	139	1.21	5.955	168
Feb. 4, 1960	23.1	159	0.74	6.05	118
Mar. 15	23.2	184	2.01	6.495	384
Apr. 21	23.3	156	0.97	5.795	152
Apr. 21	23.3	136	0.76	5.87	104
July 7	24.0	178	1.39	6.29	247
Sept. 11	24.0	174	1.56	6.44	271

Nazarjuft Canal near Darweshan, Afghanistan

Location.—Lat 31° 08' N., long 64° 07' E., on left bank of Helmand River about 300 meters upstream from Darweshan Canal and 6.5 kilometers north of Darweshan bridge.

Discharge measurements are those made by wading near the diversion from the Helmand River.

Date	Width (feet)	Area (sq-ft)	Velocity (ft/sec)	Gage Height (meters)	Discharge (cfs)
Apr. 20, 1959	15.0	20.3	1.28	7.65	26.0
Apr. 20	11.0	11.0	1.15	7.54	12.7
Apr. 21	6.00	4.40	1.02	7.185	4.45
Apr. 21	7.00	7.10	1.21	7.31	8.66
Apr. 21	9.00	10.6	1.04	7.40	11.2
June 10	15.0	15.9	0.94	7.495	15.1
Aug. 15	15.0	15.5	1.10	7.54	14.9
Sept. 30	20.0	26.4	0.47	7.775	12.5
Oct. 12	22.0	35.5	0.45	7.88	15.9
Feb. 4, 1960	11.0	13.4	0.62	7.37	8.26
July 8	18.0	36.5	0.16	6.97	5.76
Sept. 11	17.0	28.3	0.39	6.92	11.1

Shamalon Canal at Diversion Dam from Boghra Canal, Afghanistan

Location.--Lat 31° 46' N., long 64° 22' E., 8 kilometers north of Chah-i-Anjir and 24 kilometers southwest of Girishk. Shamalon Canal diverts water from south side of Boghra Canal at Station 31 + 680 meters from point where Boghra Canal diverts from Helmand River.

Discharge measurements made by wading or by temporary cable across canal.

Date	Width (feet)	Area (sq-ft)	Velocity (ft/sec)	Gage Height (meters)	Discharge (cfs)
Mar. 23, 1953	30.8	37.8	1.71	0.390	64.6
Mar. 25	27.6	15.5	1.20	0.174	18.6
Mar. 28	38.0	64.3	3.30	0.760	212
Mar. 31	40.6	77.5	3.69	0.85	286
Apr. 2	37.5	80.8	2.80	0.82	226
Apr. 5	38.0	172	1.62	0.98	278
Apr. 8	48.9	103	3.46	0.96	356
Apr. 8	28.0	144	2.45	0.96	353
Apr. 11	28.0	146	3.09	1.02	451
Apr. 15	42.0	155	3.43	1.10	531
May 4	42.5	145	3.34	1.08	485
June 27	38.2	98.1	3.30	0.94	324
Feb. 14, 1955	29.0	22.9	1.10	0.28	25.1
Feb. 21,	38.0	90.4	2.84	0.85	255
Feb. 24	42.0	108	3.06	0.945	331
Dec. 24	38.0	61.5	2.19	0.63	135
Feb. 5, 1956	38.0	37.5	1.57	0.49	59.0
Feb. 5	34.0	38.2	1.55	0.385	59.1
Feb. 7	32.0	32.9	1.30	0.315	42.7
Feb. 9	38.0	75.7	2.19	0.64	166
Feb. 9	38.0	77.0	2.08	0.64	160
Feb. 10	39.0	72.9	2.44	0.695	178
Feb. 15	44.0	102	3.03	0.88	310
Sept. 16	42.0	175	3.20	1.15	560
Dec. 9	44.0	168	3.44	1.16	579
May 11, 1959	40.0	152	4.09	1.13	540
May 11	46.0	154	4.11	1.17	633

South Canal near Kandahar, Afghanistan

Location.--Lat 31° 46' N., long 65° 46' E., on left bank of Arghandab River at diversion dam about 18 kilometers north of Kandahar.

Discharge measurements made by a temporary cable suspension across the canal.

Date	Width (feet)	Area (sq-ft)	Velocity (ft/sec)	Gage Height (meters)	Discharge (cfs)
Apr. 1, 1958	30.0	53.4	0.34	0.005	18.0
Apr. 2	43.0	125	2.44	0.935	306
May 12	67.0	308	2.12	1.33	652
May 15	67.0	321	2.49	1.47	800

MISCELLANEOUS DISCHARGE MEASUREMENTS

Tarnak Canal near Kandahar, Afghanistan

Location.--Lat 31° 59' N., long 65° 39' E., at South end of South Canal where the South Canal divides its water between Tarnak and Baba Wali Canals; about 13 kilometers northwest of Kandahar.

Discharge measurements are those made near point of diversion or above any turnouts from the Tarnak Canal.

Date	Width (feet)	Area (sq-ft)	Velocity (ft/sec)	Gage Height (meters)	Discharge (cfs)
Jan. 4, 1958	26.0	38.6	0.90	2.125	34.9
Apr. 2	16.0	7.6	0.81	2.08	6.19
Apr. 8	28.0	37.0	1.57	2.715	58.0
June 5	7.0	2.9	0.96	1.14	2.77

ARGHANDAB RESERVOIR NEAR KANDAHAR, AFGHANISTAN

Temperature, Precipitation, Evaporation

Location.--Observation station is at north end of radio room 5 meters west of gasoline pump about .6 kilometers west of valve house to reservoir outlet. Lat 31° 51' N., long 65° 54' E., and about 35 kilometers northeast of Kandahar.

Equipment.--Rain gage: A standard 8-inch non-recording U.S. Weather Bureau rain gage can and measuring stick.

Thermometers: Maximum and minimum thermometers and support in a wooden shelter.

Evaporation Pan: Evaporation pan is of welded steel plate 36 inches square and 19-3/4 inches deep set in the ground. Water surface was read from a reference point at top edge of pan.

Averages and extremes for period of record.--

January 1952 to September 1960

Temperatures:	Average daily maximum	34.2°C
	Average daily minimum	14.8°C
	Maximum	47.8°C
	Minimum	-7.8°C
Precipitation:	Average yearly	252.7 millimeters
Evaporation:	Average yearly pan	1789 millimeters

Monthly and annual average maximum and minimum and maximum and minimum Temperatures in degrees centigrade

at Arghandab Reservoir, Afghanistan

Year		Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Annual
1952	Ave.					25.1	26.9	34.1	36.5	44.4	41.6	39.4	35.4	
	Ave.					4.0	7.6	15.7	17.7	24.4	24.7	21.5	18.1	
	Max.					34.5	34.5	41.7	42.8	47.8	44.4	42.8	40.0	47.8
	Min.					-1.1	-0.6	20.6	11.7	18.1	22.2	18.3	13.4	-1.1
1953	Ave.	29.3	23.2	16.3	15.2	18.2	24.3	30.5	35.4	40.0	42.6	40.5	36.1	29.3
	Ave.	10.1	4.4	0.9	1.4	6.4	9.8	14.3	19.3	22.0	25.2	21.8	17.4	12.7
	Max.	33.4	28.9	22.8	20.0	30.0	31.7	39.5	39.5	45.0	45.6	44.4	40.0	45.6
	Min.	3.3	0.6	-4.4	-3.3	2.8	2.2	6.7	17.2	15.0	22.2	18.3	15.0	-4.4
1954	Ave.	28.8	22.6	20.3	12.4	14.1	21.7	29.4	36.8	e40.7	40.0	38.0	37.3	28.5
	Ave.	9.4	4.5	4.2	1.8	3.6	9.0	15.3	19.4	e20.9	22.9	20.5	16.5	12.3
	Max.	35.0	28.9	26.7	18.9	20.0	31.1	37.8	43.3	-	42.9	42.2	41.7	43.3
	Min.	1.1	-1.1	-0.6	-6.1	-1.1	-1.1	3.3	16.7	-	18.9	17.2	11.1	-6.1
1955	Ave.	26.6	21.4	16.8	e13.0	e17.7	e23.4	28.4	32.9	39.5	e41.1	e40.0	e36.8	28.1
	Ave.	9.4	7.0	2.1	e1.7	e3.7	e8.3	15.4	17.2	21.7	e24.0	e21.3	e16.9	12.2
	Max.	28.9	28.9	20.6	-	-	-	33.4	37.8	42.2	-	-	-	-
	Min.	4.4	2.8	-5.0	-	-	-	3.3	11.1	16.7	-	-	-	-
1956	Ave.	e28.8	24.5	e16.0	e13.0	17.2	25.9	28.4	38.9	39.5	39.5	38.9	e36.8	28.9
	Ave.	e11.4	6.1	e3.0	e1.7	3.9	7.8	15.9	19.4	21.7	25.6	22.2	e16.9	12.8
	Max.	-	28.9	-	-	25.6	26.1	35.6	45.6	44.4	43.3	42.8	-	45.6
	Min.	-	3.3	-	-	-2.2	0	3.3	14.4	17.8	21.1	18.9	-	-2.2
1957	Ave.	e28.8	22.8	16.7	6.7	13.4	21.1	25.9	31.7	38.9	40.6	39.5	34.5	26.5
	Ave.	e11.4	6.1	2.8	2.2	1.7	8.3	11.7	17.2	20.6	22.2	20.6	14.4	11.6
	Max.	-	26.1	21.1	15.6	21.1	29.5	28.4	40.0	41.7	43.9	43.3	36.1	43.9
	Min.	-	3.3	-2.2	-5.0	-3.3	3.3	6.1	13.4	17.8	16.7	16.7	12.2	-5.0
1958	Ave.	28.9	19.4	12.8	14.4	17.2	25.0	32.2	34.5	40.6	41.7	38.3	37.1	28.5
	Ave.	10.6	6.7	4.4	3.9	2.8	10.0	16.1	17.2	22.2	25.6	21.7	17.8	13.2
	Max.	35.6	27.8	24.5	17.8	22.2	32.2	38.3	36.7	42.8	47.2	41.7	42.2	47.2
	Min.	2.2	-1.1	-1.1	-1.1	-1.1	1.1	9.4	13.4	17.8	21.1	17.8	15.6	-1.1
1959	Ave.	29.1	23.9	16.1	13.2	13.9	24.0	31.8	34.6	41.3	42.0	43.4	40.0	29.4
	Ave.	14.4	2.8	5.9	1.4	1.6	8.7	13.8	17.2	20.6	24.0	23.0	18.7	12.7
	Max.	32.8	27.8	26.7	17.2	21.1	32.2	37.2	41.2	45.6	45.6	45.0	42.8	45.6
	Min.	7.8	-1.1	2.2	-3.3	-3.3	0	8.3	10.0	16.7	18.3	20.0	14.4	-3.3

e - Estimated.

Monthly and annual average maximum and minimum and maximum and minimum Temperatures in degrees centigrade

at Arghandab Reservoir, Afghanistan

Year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Annual
1960 Ave.	30.2	24.5	15.2	15.9	22.5	20.0	26.0	35.9	41.2	40.8	41.6	37.0	29.0
Ave.	14.7	10.1	0.9	-0.4	5.5	5.5	10.8	18.2	15.8	21.8	19.2	17.7	11.5
Max.	34.5	28.4	20.6	19.4	27.8	30.0	37.2	43.3	43.9	45.0	43.3	38.9	45.0
Min.	11.7	5.9	-7.8	-3.9	-1.1	-3.9	7.2	10.0	8.9	12.2	18.1	12.8	-7.8
Period Ave.	28.8	22.8	16.0	15.0	17.7	23.4	29.4	35.2	40.7	41.1	40.0	36.8	34.2
Ave.	11.4	6.0	3.0	1.7	3.7	8.3	15.9	17.9	20.9	24.0	21.3	16.9	14.8
Max.	35.6	28.9	26.7	20.0	34.5	34.5	41.7	45.6	47.8	47.2	45.0	42.8	47.8
Min.	1.1	-1.1	-7.2	-6.1	-3.3	-3.9	3.3	10.0	8.9	12.2	16.1	11.1	-7.8

PRECIPITATION IN MILLIMETERS AT ARGHANDAB RESERVOIR, AFGHANISTAN

1951

Jan.	5	10.0	Mar.	6	8.0	Mar.	25	10.0	May	5	0.5
	9	7.0		7	1.0		26	15.5		6	4.5
	10	1.5		8	0.5		28	0.5		7	10.0
Feb.	6	2.0		10	1.0	Apr.	1	7.0		8	3.5
	7	47.0		16	12.5		2	10.0		12	1.0
	8	25.0		18	5.0		3	1.0			
	9	2.5		23	T		22	0.5			
Mar.	5	0.5		24	2.0		24	0.5			

1952

Feb.	1	2.0	Mar.	3	4.5	Mar.	26	2.3	Apr.	27	T
	2	1.5		4	0.1		30	T	May	2	2.0
	12	2.0		8	T	Apr.	3	T		7	T
	13	22.5		12	13.5		4	9.6	July	21	T
	14	9.5		14	6.2		5	T			
	26	T		20	0.5		16	T			
	28	T		25	2.6		26	T			

No record for January and June.

1953

Oct.	5	0.2	Feb.	2	3.2	Mar.	22	T	June	18	T
Nov.	28	0.5		7	T		23	0.9		28	T
Dec.	16	T		8	6.4		24	0.9	July	9	T
	29	0.2		10	38.2	Apr.	7	T		18	T
	30	T		12	9.2		11	3.1		28	T
Jan.	13	7.0		13	28.7		12	8.4	Aug.	7	T
	14	15.0		14	21.2		14	T		19	T
	18	12.0	Mar.	5	1.1	May	10	T			
	19	1.0		6	0.2	June	1	0.9			
Feb.	1	T		14	T		7	T			

1954

Nov.	28	T	Feb.	11	10.5	Feb.	28	2.0	Mar.	31	1.0
Jan.	5	38.0		12	17.0	Mar.	1	24.0	Apr.	16	1.0
	6	15.0		13	9.5		9	6.0		22	5.0
	7	9.0		15	4.0		10	2.5		25	6.0
	10	1.0		16	16.0		11	1.0	May	9	5.0
	29	20.0		17	16.0		29	6.0			
Feb.	10	43.0		18	10.0		30	25.0			

No record for June.

T - Trace.

PRECIPITATION IN MILLIMETERS AT ARGHANDAB RESERVOIR, AFGHANISTAN

1955

May	25	8.0		May	26	1.0					

No record January, February, March, July, August and September.

1956

Feb.	15	7.0		Mar.	14	6.0		Apr.	7	5.0	
	25	10.0			15	3.0			8	6.0	
	26	15.0			18	1.0			21	8.0	
	27	20.0			19	1.0			29	1.0	
	28	1.0			20	15.0		July	15	5.0	
Mar.	4	4.0			24	25.0			16	2.0	
	5	15.0			29	2.0			17	12.0	
	15	3.0			30	8.0			18	6.0	

July	19	8.0	
	22	2.0	
	24	2.0	
	25	4.0	
	26	3.0	
	28	23.0	

No record October, December, January and September.

1957

Nov.	1	2.0		Jan.	13	43.0		Mar.	17	26.0	
Dec.	24	4.0			14	1.0			18	23.0	
	31	2.0			25	49.0			19	2.0	
Jan.	1	15.0			26	7.0			23	5.0	
	4	1.0		Feb.	2	21.0			27	2.0	
	7	34.0			6	5.0			28	5.0	
	8	8.0		Mar.	9	6.0		Apr.	2	5.0	
	9	13.0			10	2.0			4	4.0	

Apr.	5	19.0	
	6	3.0	
	14	2.0	
	29	3.0	
May	1	5.0	
	3	6.0	
	4	3.0	
	12	4.0	

No record for October.

1958

Nov.	6	4.0		Nov.	25	8.0		Dec.	11	20.0	
	13	2.0		Dec.	3	2.0			29	2.0	
	19	41.0			6	26.0			30.	5.0	
	20	2.0			8	29.0		Jan.	21	8.0	
	23	1.0			10	9.0		Feb.	26	9.0	

Mar.	11	2.0	
	28	11.0	
Apr.	2	4.0	
	16	3.0	
July	13	2.0	

No record for June

PRECIPITATION IN MILLIMETERS AT ARGHANDAB RESERVOIR, AFGHANISTAN

1959

Nov.	10	1.0	Jan.	15	3.0	Feb.	25	7.0	Apr.	3	9.0
Dec.	11	24.0		18	3.0		26	7.0		21	2.0
	12	43.0		24	14.0	Mar.	1	25.0		22	6.0
	20	20.0	Feb.	3	4.0		2	6.0		23	1.5
	21	4.0		9	0.5		9	3.5	May	16	0.5
Jan.	3	20.0		10	16.0		28	0.5		17	15.0
	4	12.0		18	23.0	Apr.	2	20.0			

1960

Nov.	3	4.0	Dec.	14	4.0	Mar.	11	3.0	Mar.	27	3.0
	4	5.0		15	5.0		12	3.5		28	24.0
	5	15.0	Jan.	10	11.0		13	8.5	Apr.	15	9.0
	25	1.5		11	1.0		14	8.0		16	1.0
	27	17.0	Feb.	1	2.0		16	3.5		17	5.0
	30	2.0		20	1.0		17	1.0		18	25.0
Dec.	1	0.5	Mar.	1	2.0		20	2.0		19	1.0
	2	18.0		5	2.0		22	10.0		22	19.0

Monthly and annual precipitation, in millimeters, at Arghandab Reservoir near Kandahar, Afghanistan

Year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Annual
1951	e0	e11.8	e27.2	18.5	76.5	56.5	19.0	19.5	0	0	0	0	229.0
1952	0	0	0	e53.9	37.5	29.7	9.6	2.0	e0.1	T	0	0	132.8
1953	0.2	0.5	0.2	35.0	106.8	3.1	11.5	T	0.9	T	T	0	158.3
1954	0	T	0	81.0	128.0	65.5	12.0	5.0	e0.1	0	0	0	291.6
1955	0	0	0				0	9.0	0				
1956	e0	0	e27.2	53.9	53.0	81.0	20.0	0	0	67.0	0	e0	454.9
1957	e0	2.0	6.0	171.0	26.0	71.0	56.0	18.0	0	0	0	0	330.0
1958	0	58.0	93.0	8.0	9.0	13.0	7.0	0	e0.1	2.0	0	0	190.1
1959	0	1.0	91.0	52.0	57.5	55.0	38.5	15.5	0	0	0	0	290.5
1960	0	44.5	27.5	12.0	5.0	70.5	60.0	0	0	0	0	0	217.5
Ave.	0	11.8	27.2	53.9	55.5	47.3	21.4	6.9	0.1	7.7	0	0	252.7

T - Trace

Monthly and annual evaporation, in millimeters, at Arghandab Reservoir near Kandahar, Afghanistan

Year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Annual
1951	e125	e90	e75	82	118	128	144	168	165	176	181	152	1604
1952	e125	91	70	e98	102	217	169	210	261	258	244	202	2047
1953	158	105	68	91	164	123	152	189	204	202	176	119	1749
1954	82	64	59	161	e95	140	259	181	e222	246	225	199	1913
1955	153	105	71	-	-	-	152	185	242	-	-	-	-
1956	e125	97	e75	e98	104	114	115	208	222	229	227	e164	1776
1957	e125	95	65	196	75	143	115	154	212	236	210	164	1790
1958	132	105	105	50	52	96	151	155	213	279	252	192	1738
1959	153	79	151	86	84	105	142	170	235	259	260	162	1845
1960	94	78	52	42	63	120	177	226	247	229	198	120	1644
Ave.	125	90	75	98	95	132	155	185	222	235	219	164	1789

e - Estimated.

BAKWA NEAR FARAH, AFGHANISTAN

Temperature and Precipitation

Location.--Observation station is at village of Bakwa. About lat 32° 15' N., long 63° 00' E., about 40 kilometers west of Dilaram on highway to Farah.

Equipment.--Raingage: A standard non-recording rain gage can and measuring stick.
Thermometers: Maximum and minimum thermometers and support in a standard wooden shelter.

Averages for period of record.--

February 1944 to September 1946
February 1950 to March 1954

Temperatures:	Average daily maximum	31.9°C
	Average daily minimum	10.1°C
Precipitation:	Average yearly 7 years	114.6 millimeters

Monthly and annual average maximum and minimum temperatures in degrees centigrade

at Bakwa near Farah, Afghanistan

Year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Annual
1944 Ave.	e32.3	e28.0	e20.5	e19.3	18.9	24.6	30.1	36.6	39.9	43.7	40.6	34.7	30.8
Ave.	e9.0	e4.8	e3.0	e1.6	2.7	9.3	13.3	18.9	22.7	25.2	22.9	16.3	12.6
1945 Ave.	30.9	30.4	e20.5	12.9	17.9	24.9	34.4	e38.6	e42.0	40.3	33.7	35.7	30.2
Ave.	10.4	10.4	e3.0	2.6	2.2	7.3	15.6	e14.9	e17.5	28.7	18.7	15.1	12.2
1946 Ave.	29.4	24.7	21.5	21.5	35.1	38.3	30.9	38.2	40.4	40.7	36.1	37.6	32.9
Ave.	9.2	10.7	8.5	8.3	9.5	11.3	9.7	17.7	18.6	24.7	23.5	15.0	15.9
1950 Ave.	e32.3	e28.0	e20.5	e19.3	18.0	26.1	32.8	39.5	43.4	41.2	44.7	36.7	31.9
Ave.	e9.0	e4.8	e3.0	e1.6	-.6	0	4.2	12.2	17.8	18.0	20.0	10.6	8.5
1951 Ave.	34.2	27.2	16.7	20.0	20.0	25.6	35.0	41.5	42.2	43.0	44.5	38.9	32.4
Ave.	4.5	0	0.6	-4.4	-6.2	1.1	6.7	13.1	15.0	18.9	15.0	15.2	6.6
1952 Ave.	37.0	28.9	23.4	22.8	23.4	29.8	35.0	37.2	44.0	43.0	40.0	34.4	33.2
Ave.	10.6	0.6	0	0	-13.4	1.1	6.0	12.8	13.3	21.1	18.1	10.0	6.7
1953 Ave.	30.0	28.3											
Ave.	10.2	2.2											
Period Ave.	32.3	28.0	20.5	19.3	22.2	28.2	33.0	38.6	42.0	42.0	39.9	36.5	31.9
Ave.	9.0	4.8	3.0	1.6	-1.0	5.0	9.2	14.9	17.5	22.8	19.7	13.7	10.1

e - Estimated.

Monthly and annual precipitation, in millimeters, at Bakwa near Farah, Afghanistan

Year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Annual
1944	e0	e6.2	e14.3	e29.6	15.2	7.6	0.5	0.8	0	0	0	0	74.2
1945	0	e6.2	e14.3	31.0	6.9	11.7	3.0	e2.2	e0	0	0	0	75.3
1946	0	15.0	39.9	22.1	48.2	12.2	e8.9	e2.2	e0	e0	e0	e0	148.5
1951	e0	e6.2	1.3	10.9	29.0	17.0	13.0	6.9	0	0	0	0	84.3
1952	0	0	11.9	e29.6	5.6	4.8	18.0	0	0	0	0	0	69.9
1953	0	3.4	4.2	3.0	e42.6	15.0	10.0	1.2	e0	e0	e0	e0	79.4
1954	e0	e6.2	e14.3	81.0	151.0	7.0	e8.9	e2.2	e0	e0	e0	e0	270.6
Ave.	0	6.2	14.3	29.6	42.6	10.8	8.9	2.2	0	0	0	0	114.6

e - Estimated

CHAH-I-ANJIR, AFGHANISTAN

Temperature, Precipitation, Evaporation

Location.--Observation station was in MKA operations area in Chah-i-Anjir. Lat 31° 37' N., long 64° 16' E., about 37 kilometers southwest of Girishk and about 145 kilometers west of Kandahar.

Equipment.--Rain gage: A standard 8-inch non-recording U. S. Weather Bureau rain gage can and measuring stick.

Thermometers: Maximum and minimum thermometers mounted in a standard wooden shelter.

Evaporation pan: Pan was galvanized iron 48-inch diameter, 10-inch deep, with an enamel gage, calibrated to centimeters, at one side. The pan set on a brick base on the ground. Pan water was read to millimeters each day and pan was refilled when level dropped as much as 100 millimeters.

Averages and extremes for period of record.--

January 1951 to October 1952

Temperatures:	Average daily maximum	29.8°C
	Average daily minimum	11.0°C
	Maximum	49.4°C
	Minimum	-8.0°C
Precipitation:	Average yearly	124.4 millimeters
Evaporation:	Average yearly pan	2994 millimeters

Monthly and annual average maximum and minimum and maximum and minimum Temperatures in degrees centigrade

at Chah-i-Anjir, Afghanistan

Year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Annual
1951 Ave.				18.5	15.2	11.3	-	33.3	39.6	-	39.0	39.1	-
Ave.				1.3	2.2	7.1		24.0	24.7		23.0	19.4	-
Max.				25.0	25.6	18.0		39.5	41.5		41.6	40.2	41.6
Min.				-3.0	-7.8	0.5		16.0	19.5		19.7	17.6	-7.8
1952 Ave.	e27.2	e21.3	19.3	14.2	19.5	24.8	34.9	39.5	44.0	43.7	40.2	36.1	30.4
Ave.	e5.7	e2.6	2.2	0.9	4.5	9.1	17.2	19.5	22.7	25.9	19.3	15.0	11.7
Max.	-	-	24.5	22.2	25.6	35.0	40.0	45.0	47.2	47.0	42.2	41.0	47.2
Min.	-	-	-5.6	-7.8	-2.2	-1.7	11.0	11.0	13.0	19.0	16.0	8.0	-7.8
1953 Ave.	28.4	21.3	15.1	15.7	20.2	26.1	34.4	38.8	43.3	44.5	38.0	32.8	29.9
Ave.	4.9	1.3	-1.7	-1.6	6.9	9.1	14.6	19.6	22.6	24.2	17.1	10.4	10.6
Max.	33.7	29.3	21.0	23.3	31.0	33.3	43.1	44.0	49.4	49.1	41.8	37.9	49.4
Min.	-1.6	-5.0	-8.0	-7.7	0.5	0.4	8.6	15.7	15.7	16.1	11.6	4.2	-8.0
1954 Ave.	25.3	21.1	18.2	13.5	14.0	23.4	31.6	39.5	41.7	42.6	40.7	36.1	29.0
Ave.	3.6	1.6	3.2	1.3	4.1	8.1	13.6	18.9	21.7	20.4	19.0	13.4	10.7
Max.	30.3	26.8	26.8	18.7	23.0	34.0	38.9	46.1	46.1	45.5	43.3	42.2	46.1
Min.	-3.8	-5.7	-5.3	-6.1	-5.0	-2.0	6.1	12.8	17.2	18.4	15.0	6.1	-6.1
1955 Ave.	27.8	21.6	16.9				Start of	33.7	39.1	43.0	41.4	36.7	-
Ave.	8.0	4.9	-0.6				Recorder	18.1	21.0	24.2	21.4	14.3	-
Max.	34.5	30.0	20.0					38.0	42.0	46.2	45.7	40.3	46.2
Min.	2.8	0	-7.2					11.1	16.1	17.2	15.5	8.5	-7.2
1956 Ave.	27.5	Station											
Ave.	6.4	Closed											
Max.	31.5												
Min.	3.3												
Period Ave.	27.2	21.3	17.4	15.5	17.2	21.4	33.6	37.0	41.5	43.4	39.9	36.2	29.8
Ave.	5.7	2.6	0.8	0.5	4.4	8.4	15.1	20.0	22.5	23.2	20.0	14.1	11.0
Max.	34.5	30.0	26.8	25.0	31.0	35.0	43.1	46.1	49.4	49.1	45.7	42.2	49.4
Min.	-3.8	-5.7	-8.0	-7.8	-7.8	-2.0	6.1	11.0	13.0	16.1	11.6	4.2	-8.0

e - Estimated.

PRECIPITATION IN MILLIMETERS AT LASHKAR GAH, AFGHANISTAN

1951

Jan.	5	11.5	Feb. 7	12.0	Mar. 8	0.5	Mar. 23	50.0
	9	8.0	8	3.0	9	5.0	24	1.0
	10	3.0	13	1.5	14	2.0	28	7.0
	17	0.5	17	1.5	15	9.0	29	1.5
Feb.	5	6.0	Mar. 6	3.5	17	4.0	31	4.5
	6	38.0	7	1.0	22	4.5		

1952

Dec.	24	6.4	Jan. 29	4.1	Mar. 3	T	Apr. 1	1.0
	25	T	30	T	4	T	3	8.0
Jan.	6	3.5	Feb. 2	3.7	9	9.9	17	T
	7	6.0	12	1.0	20	0.1	18	T
	11	1.0	14	2.7	24	1.2	May 1	1.0
	19	7.8	15	1.5	25	6.7	2	1.0
	27	T	25	T	26	5.5	6	2.0
	28	T	28	T	29	0.2	13	1.0

1953

Oct.	5	T	Dec. 29	T	Feb. 3	3.0	Mar. 23	6.0
	13	T	Jan. 12	5.0	9	6.0	Apr. 9	1.0
	15	1.0	13	3.0	11	17.0	10	3.0
	16	T	14	T	12	6.0	11	6.0
	30	T	17	T	13	14.0	May 9	1.0
Dec.	15	4.0	18	T	Mar. 4	2.0	27	T
	28	2.0	23	T	22	2.0	31	1.0

1954

Nov.	22	T	Dec. 29	2.0	Jan. 27	T	Feb. 27	T
Dec.	8	1.0	Jan. 2	T	29	24.0	28	2.0
	11	1.0	3	2.0	Feb. 3	2.0	Mar. 9	4.0
	12	T	4	39.0	8	3.0	21	1.0
	13	T	5	5.0	9	3.0	29	15.0
	19	T	6	5.0	11	10.0	Apr. 12	T
	22	7.0	7	T	12	13.0	22	4.0
	23	T	10	T	16	4.0	May 8	T

T - Trace

Monthly and annual precipitation, in millimeters, at Chah-i-Anjir, Afghanistan

Year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Annual
1951	e0	e0	e6.0	23.0	62.0	93.5	e8.0	0	0	0	0	0	192.5
1952	0	0	6.4	22.4	8.9	23.6	9.0	5.0	0	0	0	0	75.3
1953	T	1.0	6.0	8.0	46.0	10.0	10.0	2.0	0	0	0	0	83.0
1954	0	T	11.0	75.0	37.0	20.0	4.0	T	0	0	0	0	147.0
1955	0	0	0										
Ave.	0	0.2	5.9	32.1	38.5	36.8	7.8	1.8	0	0	0	0	124.4

T - Trace

Monthly and annual pan evaporation, in millimeters, at Chah-i-Anjir, Afghanistan

Year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Annual
1951				61	67	85	-	286	340	-	-	-	
1952	e214	e149	47	31	112	125	268	362	478	518	417	302	3023
1953	212	158	78	79	102	214	241	351	386	378	372	286	2857
1954	245	204	87	68	75	146	218	352	692	400	368	270	3125
1955	185	105											
Ave.	214	149	71	60	88	158	242	338	474	432	386	286	2994

e - Estimated.

DARWESHAN, AFGHANISTAN

Temperature, Precipitation, Evaporation

Location.--Observation station is 20 feet west of north end of most westerly building, .5 kilometer north of east end of bridge over Helmand River in Darweshan. Lat 31° 01' N., long 64° 06' E., on east bank of Helmand River about 53 kilometers downstream from Arghandab River and about 175 kilometers southwest of Kandahar.

Equipment.--Rain gage: A standard 8-inch non-recording U.S. Weather Bureau rain gage can and measuring stick.

Thermometers: Maximum and minimum thermometers and support in a standard wooden shelter. Centigrade scales.

Evaporation pan: Pan is galvanized iron, round, 125 cms in diameter, 26 cms deep. Pan sets on a gravel base. Depth of water over a reference point in the pan is read to millimeters each day and is refilled when level drops as much as 100 millimeters.

An 8-foot high woven wire fence encloses a 3.35 X 3.35 meter area where above equipment is located.

Averages and extremes for period of record:--

December 1956 to September 1960

Temperatures:	Average daily maximum	31.2°C
	Average daily minimum	12.4°C
	Maximum	48.4°C
	Minimum	-3.3°C
Precipitation:	Average yearly	88.6 millimeters
Evaporation:	Average yearly pan	2816 millimeters

PRECIPITATION IN MILLIMETERS AT DARWESHAN, AFGHANISTAN

1957

Dec.	24	2.3	Jan.	11	0.1	Mar.	8	0.3	Apr.	4	15.0
	31	1.0		12	19.0		9	0.1		28	T
Jan.	1	9.8		13	2.3		16	0.3		30	15.0
	2	1.0		24	18.5		17	0.4	May	10	T
	6	0.1	Feb.	1	15.0		26	0.1			
	7	1.3		2	0.3		27	0.3			
	8	20.0		5	2.5	Apr.	3	0.5			

1958

Nov.	5	3.8	Dec.	5	1.0	Dec.	30	T	Feb.	25	1.0
	18	9.5		9	7.0	Jan.	9	7.0	Mar.	27	3.0
	19	1.8		10	6.5		24	2.0		31	T
	23	1.0		11	T		31	0.5			
	24	5.0		29	3.0	Feb.	16	T			

Monthly average maximum and minimum and maximum and minimum temperatures in degrees centigrade at Darweshan, Afghanistan

Year		Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Annual
1957	Ave.			Start	12.8	17.6	25.2	28.0	34.6	39.8	44.4	42.2	34.8	
	Ave.				2.0	2.2	7.8	12.0	16.4	19.8	20.6	19.2	13.0	
	Max.				24.5	24.5	30.6	31.7	41.2	42.2	47.8	46.4	36.7	48.4
	Min.				-1.1	-3.3	1.1	6.1	12.2	17.8	16.7	14.4	9.4	-3.3
1958	Ave.	30.4	22.0	17.0	18.2	20.8	30.3	35.6	36.7	42.2	43.2	40.7	37.4	31.2
	Ave.	8.4	5.8	3.4	4.0	2.4	10.9	15.5	15.6	21.8	23.4	20.2	17.4	12.4
	Max.	36.7	28.4	25.6	25.6	26.1	34.5	43.3	40.6	45.0	46.1	44.4	41.7	46.1
	Min.	0.6	-1.7	-3.3	-2.2	-2.8	1.1	8.9	6.7	19.4	18.9	15.6	11.1	-3.3
1959	Ave.	30.5	Closed											
	Ave.	8.6												
	Max.	35.6												
	Min.	0.6												

Monthly and annual precipitation in millimeters at Darweshan, Afghanistan

Year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Annual
1957	0	0	3.3	72.1	17.8	1.5	30.5	T	0	0	0	0	125.2
1958	0	21.1	17.5	9.5	1.0	3.0	0	0	0	0	0	0	52.1

Monthly evaporation, in millimeters at Darweshan, Afghanistan

Year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Annual
1957			Start	46	64	97	201	300	394	443	410	321	a2641
1958	212	101	52	55	108	209	284	381	434	448	422	335	2991
1959	219	Closed											

a Estimated October, November and December the same as 1958

KALA KANG, AFGHANISTAN

Temperature, Precipitation, Evaporation, Wind Velocity, Humidity

Location.--Observation station is in military compound in Kala Kang. Lat 31° 06' N., long 61° 53' E., about 9 kilometers north of Shela Charkh, about 18 kilometers southwest of Chakansur, about 27 kilometers downstream from Khoabgah where Afghanistan-Iran border meets Helmand River and about 110 kilometers downstream from Chahar Burjak.

Equipment.--Rain gage: Standard 8-inch non-recording U.S. Weather Bureau rain gage can and measuring stick.

Thermometers: Maximum and minimum thermometers and support and a Hydrothermograph for recording air temperature and humidity are in a wooden shelter.

Evaporation pan: Pan is galvanized iron 30" x 30" square and 12 inches deep set on wooden boards. Pan has a 30 cm enamel iron gage section mounted in corner of tank. Pan water is read to millimeters each day and has been refilled when level drops as much as 100 millimeters.

Note:--This pan replaced a round 48-inch diameter galvanized iron pan one foot deep and set on wooden boards with an enamel iron gage mounted on one side on Apr. 24, 1960.

A barbed wire fence encloses the area where the above equipment is located.

Anemometer is located on the roof of the guard house at the entrance to the military compound and is read daily in miles.

Averages and extremes for period of record:--

August 1955 to September 1960

Temperatures:	Average daily maximum	28.0°C
	Average daily minimum	12.2°C
	Maximum	47.6°C
	Minimum	-9.2°C
Precipitation:	Average yearly	75.6 millimeters
Evaporation:	Average yearly pan	4306 millimeters
Wind:	Average velocity	305 kilometers per day
	Maximum velocity	1179 kilometers per day
	Maximum velocity November to April, Average	207 kilometers per day
	Maximum velocity May to October, Average	407 kilometers per day
Humidity:	Average daily high	59.2%
	Average daily low	21.3%

Monthly and annual average maximum and minimum and maximum and minimum temperatures in degrees centigrade at Kala Kang, Afghanistan

Year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Annual
	Record began Aug. 24, 1955												
1955 Ave.											34.3	35.4	
Ave.											22.7	17.6	
Max.											40.6	40.0	
Min.											21.1	7.0	
1956 Ave.	26.6	24.1	16.3	12.8	18.3	19.4	28.9	35.4	37.4	40.7	38.1	29.6	27.3
Ave.	8.5	4.9	3.9	0.3	2.2	7.9	13.2	17.2	21.4	26.0	23.1	11.6	11.7
Max.	31.1	28.5	23.0	18.8	26.4	30.6	35.0	43.1	44.0	44.7	42.0	36.8	44.7
Min.	1.0	1.2	-1.9	-4.5	-4.9	2.1	0.2	11.0	16.5	22.6	19.6	3.4	-4.9
1957 Ave.	e28.8	22.7	13.5	9.8	15.4	22.1	23.4	31.7	35.5	38.2	37.0	32.9	25.9
Ave.	e10.2	3.4	0.9	1.9	1.9	8.5	11.1	16.1	20.5	22.5	22.0	15.6	11.2
Max.	-	28.2	22.8	20.0	22.9	28.4	31.0	38.9	38.5	44.2	41.3	35.2	44.2
Min.	-	-1.5	-6.5	-2.2	-3.0	4.9	2.9	12.0	16.1	18.0	17.6	10.0	-6.5
1959 Ave.	29.0	20.6	17.2	17.1	20.3	27.7	33.1	33.1	41.3	41.4	38.6	35.5	29.6
Ave.	10.8	7.8	4.2	7.2	5.8	9.8	14.2	18.4	20.7	24.6	23.5	18.8	13.8
Max.	36.5	29.2	23.9	21.9	25.3	40.5	39.8	38.8	44.2	45.2	43.5	40.3	45.2
Min.	1.9	0.5	-4.3	0.9	1.2	0.5	6.2	11.9	11.9	20.5	16.5	10.2	-4.3
1959 Ave.	28.7	17.9	17.7	14.4	16.7	25.0	31.5	34.5	39.1	40.5	41.8	37.1	28.7
Ave.	10.6	1.4	3.8	0.8	2.0	7.8	14.0	16.6	21.4	23.3	21.9	18.4	11.8
Max.	34.3	28.9	25.2	19.5	25.3	34.5	38.5	41.9	43.8	44.2	44.5	40.9	44.5
Min.	4.2	-7.8	-4.5	-7.6	-6.5	3.8	8.9	7.5	15.2	11.2	9.0	8.5	-7.8
1960 Ave.	30.7	20.4	13.2	16.2	22.6	21.4	27.7	34.2	40.5	40.9	40.7	35.4	28.7
Ave.	11.0	5.3	-1.7	-1.0	4.3	4.8	12.1	17.6	22.0	27.1	26.4	20.6	12.4
Max.	36.2	25.8	18.8	23.2	29.7	31.8	38.9	40.5	45.2	47.6	43.2	40.4	47.6
Min.	4.5	-1.5	-8.2	-9.2	-1.6	-8.2	3.2	9.2	13.9	22.5	20.5	12.2	-9.2
Period Ave.	28.8	21.1	15.6	14.1	18.7	23.1	28.9	33.8	38.8	40.3	38.4	34.3	28.0
Ave.	10.2	4.6	2.2	1.8	3.2	7.8	12.9	17.2	21.2	24.7	23.3	17.1	12.2
Max.	36.5	29.2	25.2	23.2	29.7	40.5	39.8	43.1	45.2	47.6	44.5	40.9	47.6
Min.	1.0	-7.8	-8.2	-9.2	-6.5	-8.2	0.2	7.5	11.9	11.2	9.0	3.4	-9.2

e - estimated

PRECIPITATION IN MILLIMETERS AT KALA KANG, AFGHANISTAN

1956

Dec. 6	2.5	Jan. 15	5.1	Mar. 19	7.6	Apr. 7	12.7
10	3.8	Feb. 27	10.9	20	3.8	July 18	7.6
15	17.8	Mar. 4	4.1	21	1.3		
Jan. 2	3.8	5	0.8	23	8.9		
11	15.7	14	16.5	28	1.8		

1957

Dec. 22	3.0	Jan. 10	3.8	Mar. 2	1.8	Mar. 29	0.8
30	3.8	11	21.6	9	5.6	Apr. 4	3.3
31	6.6	21	3.8	17	5.6	5	16.5
Jan. 2	6.6	23	2.5	20	1.0	May 2	2.0
6	11.4	Feb. 2	5.8	26	4.1	9	3.8
7	21.1						

1958

Nov. 6	2.5	Dec. 10	6.3	Jan. 24	0.4	Feb. 1	3.8
11	1.8	11	5.6	25	5.1		
24	5.3	Jan. 10	4.6	26	12.7		

1959

Dec. 12	1.8	Jan. 15	4.3	Jan. 25	3.0	Mar. 27	2.0
18	3.3	18	14.4	Mar. 8	1.5		
19	8.9	24	1.3	26	1.8		

1960

Oct. 31	3.8	Jan. 9	1.8	Apr. 13	1.5	Apr. 21	1.3
Nov. 26	4.1	10	1.5	14	1.8	May 1	1.3
Dec. 1	3.3	11	1.5	16	0.8		
2	3.8	Mar. 26	1.3	20	0.8		

Monthly and Annual Precipitation, in millimeters, at Kala Kang, Afghanistan

Year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Annual
1955											0	0	
1956	0	0	24.1	24.6	10.9	44.8	12.7	0	0	7.6	0	0	124.7
1957	0	0	13.4	70.8	5.8	18.9	19.8	5.8	0	0	0	0	134.5
1958	0	9.6	11.9	22.8	3.8	0	0	0	0	0	0	0	48.1
1959	0	0	14.0	25.0	0	5.3	0	0	0	0	0	0	42.3
1960	3.8	4.1	7.1	4.8	0	1.3	6.2	1.3	0	0	0	0	28.6
Ave.	0.8	2.7	14.1	29.2	4.1	14.1	7.7	1.4	0	1.5	0	0	75.6

Monthly and annual evaporation, in millimeters, at Kala Kang, Afghanistan

Year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Annual
		Note: These are observed pan evaporation readings.											
1955											785	457	
1956	322	264	98	84	159	156	261	409	657	670	642	356	4078
1957	282	187	171	215	54	198	375	409	569	681	680	459	4280
1958	267	138	152	78	151	310	385	551	628	603	693	491	4447
1959	434	231	111	117	130	155	239	406	670	732	*753	e441	4419
1960	-	-	-	-	-	-	-	479	585	825	869	935	
Ave.	326	205	133	124	124	205	315	451	622	702	737	523	4306

* - Based on 12 days record.
e - Estimated.

Monthly and annual average wind velocity and maximum velocity, in kilometers, per day at Kala Kang, Afghanistan

Year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Annual
1955											604	410	
											866	845	
1956	318	210	164	188	201	268	215	357	562	379	537	457	321
	770	640	447	648	629	951	668	914	850	1179	864	746	1179
1957	257	160	224	196	221	195	275	274	475	492	518	397	307
	561	606	530	585	567	432	698	628	660	998	888	664	998
1958	295	251	179	136	186	212	220	358	371	458	485	406	296
	795	558	561	585	343	501	489	756	642	902	750	693	902
1959	282	234	168	173	276	208	230	346	388	491	451	366	301
	583	797	522	690	636	736	550	602	608	736	652	572	797
1960	279	202	197	177	155	257	237	364	383	497	448	415	300
	715	484	662	539	392	645	734	915	664	697	648	586	913
Ave.	286	211	184	174	208	228	235	340	436	463	507	408	305
Max.	795	797	662	690	636	951	734	914	850	1179	888	845	1179

Monthly and annual average relative humidity, high and low in percent at Kala Kang, Afghanistan

Year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Annual
	Record began Aug. 23, 1955												
1955											29.0	37.8	
											12.9	16.1	
1956	46.2	70.8	77.9	75.0	71.5	73.1	70.9	58.0	37.5	42.1	29.9	54.2	58.9
	17.8	21.9	34.8	32.0	19.6	32.8	19.4	15.8	16.7	18.4	15.1	19.0	21.9
1957	e57.5	80.1	74.8	76.5	74.5	75.9	70.5	66.6	46.3	38.8	38.7	44.0	62.0
	e20.2	20.6	30.1	44.9	25.5	24.2	25.8	16.2	17.4	16.4	19.0	18.1	23.5
1958	65.1	72.2	75.6	79.2	71.0	67.9	67.4	47.6	48.0	39.6	36.8	44.6	59.6
	19.3	25.8	32.8	32.5	17.0	15.0	16.9	16.5	16.1	17.6	18.6	20.9	20.8
1959	57.7	e74.0	e71.4	e71.2	e73.2	71.4	66.5	47.0	40.1	34.1	33.0	40.3	57.5
	20.8	e24.7	e32.2	e33.5	e20.5	20.4	15.1	15.2	14.3	18.9	18.4	20.1	22.0
1960	61.0	73.2	77.5	74.3	75.6	71.7	69.6	53.8	41.0	31.3	31.3	35.6	58.0
	22.8	30.5	30.9	24.7	19.8	21.8	21.4	16.1	14.7	17.1	15.6	19.3	21.2
Ave.	57.5	74.0	76.4	76.2	73.2	72.0	69.0	54.6	42.6	37.2	33.1	42.8	59.2
Ave.	20.2	24.7	32.2	33.5	20.5	22.8	19.7	16.0	15.8	17.7	16.6	18.9	21.3

e - Estimated.

KANDAHAR, AFGHANISTAN

Temperature, Precipitation, Evaporation

Location.--Observation station is 30 meters west of radio room in Manzel Bagh compound on northeast side of Kandahar. Lat 31° 37' N., long 65° 43' E.

Equipment.--Rain gage: A standard 8-inch non-recording U.S. Weather Bureau rain gage can and measuring stick.

Thermometers: Maximum and minimum thermometers and support in a wooden shelter.

Evaporation Pan: Evaporation pan is of welded steel plate 36 inches square and 19-3/4 inches deep set on the ground.

Averages and extremes for period of record.--

January 1940 to February 1960

Temperatures:	Average daily maximum	27.5°C
	Average daily minimum	9.2°C
	Maximum 1952	45.8°C
	Minimum 1951	-12.2°C
Precipitation:	Average yearly	177.8 millimeters
Evaporation:	Average yearly pan	1752 millimeters

Monthly and annual average maximum and minimum and maximum and minimum Temperatures in degrees centigrade

at Kandahar, Afghanistan

Year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Annual
	British Consulate 1940-1949												
1940 Ave.				-	16.1	18.9	27.2	33.9	38.3	39.5	-	33.9	
Ave.				-	3.3	5.0	10.0	15.0	18.3	20.0	-	12.2	
Max.				16.7	26.7	23.9	35.6	41.7	43.9	41.7	35.6	37.2	43.9
Min.				-1.7	-1.7	-0.6	0.6	6.7	12.2	17.2	11.1	8.3	-1.7
1941 Ave.	29.5	23.9	16.1	13.9	19.4	25.0	27.2	34.9	38.0	38.9	37.1	33.7	28.1
Ave.	8.9	3.3	0.6	0	3.3	4.4	12.8	15.7	19.1	20.0	18.3	11.0	9.8
Max.	32.2	27.8	22.8	20.6	26.1	29.5	36.1	41.2	41.2	41.7	41.2	36.1	41.7
Min.	6.1	-0.6	-3.9	-3.9	-0.6	3.9	6.1	11.7	13.9	17.2	15.0	8.9	-3.9
1942 Ave.	32.2	23.9	14.4	12.3	10.0	23.3	29.5	33.9	36.1	38.3	36.1	33.4	26.9
Ave.	8.3	2.8	2.2	1.0	2.9	7.2	11.7	15.0	17.8	21.1	15.9	10.6	9.7
Max.	37.2	31.7	25.0	18.3	17.2	31.1	36.1	38.3	40.0	41.2	40.0	37.8	41.2
Min.	3.9	-5.0	-5.6	-6.1	-1.1	1.7	5.0	11.1	14.4	18.3	11.1	6.1	-6.1
1943 Ave.	26.7	25.6	14.3	9.8	16.7	22.0	25.8	e33.8	36.2	36.3	37.0	33.4	26.5
Ave.	7.2	4.4	-1.2	-1.2	2.2	5.2	9.7	e15.0	14.3	18.4	16.3	e12.0	8.5
Max.	32.8	29.5	23.9	15.0	25.0	29.5	31.1	37.2	39.5	40.6	41.2	36.7	41.2
Min.	2.8	0	-5.6	-3.9	-6.1	-1.7	2.8	8.9	11.7	16.1	13.4	5.6	-6.1
1944 Ave.	e28.8	e22.1	19.2	16.9	15.8	22.2	28.6	32.9	37.1	38.7	e37.7	32.9	27.7
Ave.	e6.4	e2.0	2.8	0.1	1.0	6.0	8.8	14.1	16.2	19.6	e18.1	9.1	8.7
Max.	31.7	25.0	23.9	20.0	20.0	28.4	35.0	38.3	38.9	40.6	40.0	37.2	40.6
Min.	2.2	-1.7	-4.4	-3.9	-4.4	2.2	6.1	8.9	10.6	16.7	15.6	4.4	-4.4
1945 Ave.	28.7	27.0	13.8	11.3	16.2	21.7	26.4	31.9	37.3	36.4	35.6	34.5	26.7
Ave.	4.6	1.7	-1.9	-1.9	-0.3	0.8	5.9	12.0	15.8	18.2	15.6	10.0	6.7
Max.	32.2	28.4	21.1	18.3	25.6	31.1	35.0	36.1	41.2	41.7	39.5	37.8	41.7
Min.	-1.1	-1.1	-9.4	-10.0	-4.4	-6.1	1.7	6.1	10.6	13.9	12.2	3.9	-10.0
1946 Ave.	29.5	22.8	15.6	13.4	18.9	22.0	32.7	33.6	37.6	38.9	39.5	35.5	28.3
Ave.	3.9	2.8	-1.7	-0.6	2.8	4.3	10.8	13.3	17.1	17.2	18.2	11.3	8.3
Max.	32.8	26.7	21.1	20.0	25.6	30.6	36.1	38.3	41.2	41.7	42.8	37.8	42.8
Min.	0.6	-1.1	-7.2	-5.0	-4.4	1.1	6.1	10.6	13.4	12.8	12.8	8.3	-7.2
1947 Ave.	33.4	20.7	13.9	14.4	16.3	22.8	28.9	32.8	36.1	38.9	41.7	36.1	28.0
Ave.	8.1	-1.4	-3.5	-0.6	1.9	6.7	8.9	13.4	15.0	17.2	20.6	12.8	8.3
Max.	37.8	27.8	21.1	23.3	22.8	27.2	36.1	36.1	38.9	42.2	44.4	40.6	44.4
Min.	2.8	-8.9	-8.9	-4.4	-3.3	3.3	5.0	7.2	11.1	12.8	12.8	7.2	-8.9
1948 Ave.	29.5	25.6	16.1	17.2	21.1	22.2	28.9	34.5	36.1	38.3	37.2	36.1	28.6
Ave.	6.1	3.3	-2.2	-2.2	-4.4	5.6	12.2	13.9	17.8	20.0	17.2	11.7	9.2
Max.	35.0	31.1	21.7	21.7	-	31.1	35.0	37.8	40.0	40.6	40.6	40.0	40.6
Min.	2.2	-0.6	-7.2	-7.2	-	-1.1	3.3	9.4	13.4	16.1	12.2	6.7	-7.2

e - Estimated

Monthly and annual average maximum and minimum and maximum and minimum Temperatures in degrees centigrade

at Kandahar, Afghanistan

Year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Annual
	British Consulate - 1949			Pakistan Consulate 1950-51				Manzel Bagh 1952-60					
1949 Ave.	29.5	22.2	16.1	13.4	16.7	21.7	24.5	35.0	34.5	38.3	36.7	35.0	27.0
Ave.	5.6	-1.7	0	-2.8	1.1	6.1	11.1	15.6	16.7	18.9	17.2	12.2	8.3
Max.	33.9	27.2	24.5	22.2	24.5	31.7	36.7	37.8	38.3	40.0	39.5	40.6	40.6
Min.	0.6	-3.9	-6.1	-10.6	-5.0	0.6	4.4	8.9	11.1	16.7	13.4	6.7	-10.6
1950 Ave.	25.0	19.3	16.5	14.4	12.1	19.5	24.9	32.8	36.7	38.3	37.1	33.0	25.8
Ave.	3.3	-1.2	-1.0	0	-1.2	4.3	7.9	13.9	15.4	20.0	16.5	8.5	7.2
Max.	35.0	25.0	22.8	16.9	22.8	25.0	31.1	37.2	38.9	39.5	39.5	36.7	39.5
Min.	-3.9	-5.6	-5.0	-7.8	-7.2	-1.7	2.2	10.0	13.4	17.2	13.4	3.9	-7.8
1951 Ave.	30.0	20.4	17.8	16.1	21.1	19.6	26.8	32.8	35.7	37.8	37.4	36.1	27.6
Ave.	4.3	-3.0	-7.8	-1.1	-6.7	4.7	8.4	12.4	13.6	15.9	14.4	10.0	5.6
Max.	33.9	26.7	21.7	22.2	25.6	25.6	35.0	38.3	40.6	40.6	40.6	38.3	40.6
Min.	0.6	-7.8	-12.2	-1.7	-10.0	0	2.2	9.4	10.6	11.1	7.8	6.1	-12.2
1952 Ave.	33.2	24.4	19.7	12.9	17.9	23.4	31.8	35.8	41.4	41.3	38.4	31.5	29.3
Ave.	8.9	-0.2	-2.9	-0.3	3.7	7.5	15.1	16.7	21.3	23.7	20.5	13.0	10.6
Max.	36.7	29.5	25.0	18.9	24.5	30.0	36.1	41.2	45.6	43.3	42.2	37.8	45.6
Min.	4.4	-3.9	-3.9	-6.7	-1.1	0	10.0	11.1	15.6	20.0	17.8	9.4	-6.7
1953 Ave.	31.0	20.7	15.0	15.1	18.5	24.1	29.8	e33.8	38.4	40.5	37.4	33.3	29.0
Ave.	7.3	2.0	-1.7	-0.5	6.2	8.6	12.3	e15.0	19.0	23.2	19.0	13.1	10.3
Max.	31.7	23.9	21.1	21.1	29.5	32.2	37.4	-	43.3	43.3	40.6	37.2	43.3
Min.	-1.1	-3.3	-7.8	-7.8	0.6	0	5.6	-	12.8	18.9	14.4	7.8	-7.8
1954 Ave.	25.4	20.1	18.7	11.5	15.2	21.8	29.0	35.0	37.8	39.3	37.2	33.4	26.9
Ave.	5.4	1.5	3.7	1.2	5.2	8.3	13.1	17.2	18.9	20.0	18.3	12.8	10.5
Max.	31.1	25.0	28.9	17.8	21.1	30.0	35.6	42.8	43.3	42.8	40.0	38.9	43.3
Min.	-1.7	-6.1	-1.7	-5.6	-2.8	-1.1	4.4	12.2	16.1	16.7	14.4	5.0	-6.1
1955 Ave.	25.0	21.1	15.6	12.2	18.9	22.2	26.1	31.1	36.7	40.6	38.9	34.5	26.9
Ave.	5.6	3.9	-2.2	1.1	2.8	9.4	9.4	14.4	17.8	21.1	21.7	13.4	9.9
Max.	30.0	26.7	21.1	16.7	23.3	27.8	32.8	35.6	40.0	43.9	43.3	38.3	43.9
Min.	2.2	-1.1	-7.8	-2.8	-3.3	2.2	1.7	8.9	13.9	16.1	15.6	6.1	-7.8
1956 Ave.	25.0	22.8	13.9	e13.9	16.7	20.0	28.4	37.8	37.8	37.8	37.2	e34.2	27.1
Ave.	5.6	1.7	2.8	e0	10.0	8.9	12.8	16.7	18.9	23.9	19.4	e12.0	11.1
Max.	30.0	26.7	22.2	-	23.3	27.8	35.6	42.8	42.8	42.8	41.2	-	42.8
Min.	0	-2.2	-2.2	-	-3.3	3.3	2.2	10.6	13.9	20.6	15.0	-	-3.3
1957 Ave.	e28.8	21.7	15.0	8.3	13.9	22.2	23.9	31.7	37.8	40.0	38.3	33.4	26.2
Ave.	e6.4	0.6	0.6	1.7	2.2	7.8	10.6	16.1	19.4	21.1	18.9	11.7	9.8
Max.	-	26.7	21.7	16.1	19.4	27.8	30.6	38.9	41.7	43.3	42.2	35.0	43.3
Min.	-	-2.2	-5.6	-4.4	-2.8	1.1	3.9	11.7	16.1	16.1	14.4	7.2	-5.6

e - Estimated

Monthly and annual average maximum and minimum and maximum and minimum Temperatures in degrees centigrade at Kandahar, Afghanistan

Year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Annual
	Manzel Bagh 1952-60												
1958 Ave.	27.8	20.0	13.9	15.0	17.2	25.0	32.2	33.9	38.8	42.8	38.9	35.0	28.4
Ave.	7.2	6.1	4.4	4.4	2.2	10.0	15.6	16.1	21.0	24.5	20.0	20.6	12.7
Max.	34.5	26.7	23.9	21.1	23.3	31.7	39.5	38.3	41.7	44.4	43.3	38.9	44.4
Min.	-0.6	-1.1	-2.2	-1.1	-2.2	0.6	8.9	13.4	13.1	20.0	13.4	9.4	-2.2
1959 Ave.	27.2	18.3	15.6	11.7	13.4	22.8	29.8	34.2	40.0	40.6	e37.7	37.2	27.4
Ave.	6.7	0	4.2	1.1	2.2	7.8	12.8	16.5	21.1	23.9	e18.1	17.2	11.0
Max.	32.8	26.1	25.0	17.2	22.2	32.2	35.6	41.2	44.4	42.8	-	40.6	44.4
Min.	1.7	-4.4	0	-4.4	-2.8	0	7.2	8.9	17.2	18.9	-	10.0	-4.4
1960 Ave.	30.1	19.2	11.1	14.2	21.5								
Ave.	9.0	5.8	0.1	0.1	4.4								
Max.	35.0	24.5	16.1	20.0	26.7								
Min.	3.3	2.2	-5.6	-4.4	-1.1								
	June 1958 from RAMI records.												
Period Ave.	28.8	22.1	15.6	13.9	16.8	22.1	28.1	33.8	37.4	39.0	32.5	34.3	27.5
Ave.	6.4	1.7	-0.2	0	2.1	6.4	11.0	15.0	17.7	20.4	16.1	12.3	9.2
Max.	37.8	31.7	28.9	23.3	29.5	32.2	39.5	42.8	45.6	44.4	44.4	40.6	45.6
Min.	-3.9	-8.9	-12.2	-10.6	-10.0	-6.1	0.6	6.1	10.6	11.1	7.8	3.9	-12.2

e - Estimated.

PRECIPITATION IN MILLIMETERS AT KANDAHAR, AFGHANISTAN

1940

Jan.	11	0.8	Jan.	29	30.2	Feb.	12	0.8	Mar.	15	1.0
	14	4.3		30	76.2		13	9.6		28	1.3
	15	1.3		31	2.3		18	1.0	Apr.	10	0.8
	16	3.0	Feb.	3	4.3		28	8.9		30	1.0
	17	5.8		8	0.5	Mar.	13	0.8			
	18	0.5		10	1.0		14	10.2			

1941

Oct.	28	0.8	Jan.	16	45.5	Mar.	12	0.5	Apr.	11	2.8
Dec.	6	34.3		17	2.8		25	1.5		12	13.5
	7	3.6	Feb.	3	0.5	Apr.	1	2.8		18	1.0
	23	0.5		4	3.6		2	1.0			
	24	2.8		19	3.0		8	5.6			
Jan.	15	5.1	Mar.	6	1.0		10	4.1			

1942

Dec.	2	2.5	Jan.	26	8.6	Feb.	17	7.1	Mar.	9	0.2
	9	6.6		27	18.8		18	6.1	Apr.	2	1.0
	25	3.3		28	0.2		19	5.1		11	2.8
	26	1.3		30	1.3		20	1.8		12	0.5
Jan.	4	8.6		31	2.3		22	0.2		25	0.2
	5	5.8	Feb.	5	0.5		23	1.0	May	2	0.5
	6	3.8		6	10.7		25	1.5		15	4.1
	7	4.3		7	12.2		26	18.8	June	4	0.2
	17	1.3		8	7.9		27	0.8		6	1.3
	22	3.8		9	30.0	Mar.	2	9.6	July	8	12.7
	23	5.1		10	4.1		5	21.6			

1943

Oct.	17	0.8	Jan.	3	8.1	Feb.	23	3.8	Apr.	5	20.5
Nov.	22	3.6		11	34.5		28	3.0		6	0.5
	24	3.8		12	7.4	Mar.	1	7.1		21	0.5
Dec.	12	0.8		15	0.5		2	9.1	May	10	2.8
	13	2.3		17	19.3		20	22.1		11	0.5
	14	2.8		23	3.8		21	2.5		12	1.0
	22	5.8		24	49.3		24	13.2		23	0.8
Jan.	1	11.2	Feb.	19	1.8	Apr.	3	0.5			

PRECIPITATION IN MILLIMETERS AT KANDAHAR, AFGHANISTAN

1944

Dec.	7	4.1	Jan.	11	14.2	Feb.	21	1.0	Mar.	26	1.0
	8	3.0		21	2.0		24	8.1		30	1.5
	10	0.8		22	12.2		25	15.4	Apr.	1	0.8
	12	2.5		23	2.8		26	1.0	May	15	2.0
	14	0.5		24	13.7		27	55.6		16	0.5
	27	0.2	Feb.	1	1.8	Mar.	11	0.5	July	13	4.8
	29	2.3		2	0.5		12	2.3		14	6.9
Jan.	4	2.5		11	5.6		18	0.5	Aug.	2	0.2
	7	19.6		14	7.1		23	0.8			

1945

Nov.	22	0.8	Dec.	27	6.9	Jan.	29	15.7	Mar.	29	0.8
	23	2.8		28	2.0		30	1.0	Apr.	5	10.7
Dec.	2	1.0	Jan.	3	7.9	Feb.	8	1.0		30	3.3
	4	2.5		4	7.1		16	5.6	May	1	3.3
	8	3.0		7	3.8		26	1.0		16	0.8
	21	2.0		8	0.5		27	0.5			
	26	0.5		22	8.9	Mar.	27	0.8			

1946

Dec.	4	1.3	Jan.	13	18.8	Feb.	7	0.8	Feb.	28	0.5
	18	14.2		14	7.1		10	8.6	Mar.	1	1.0
	20	3.6		15	0.8		11	3.0		11	15.2
	21	1.0		22	5.3		19	1.5		12	3.0
Jan.	11	6.4		23	23.6		21	1.0	May	3	0.5
	12	43.4		29	2.0		26	19.9			

1947

Dec.	20	3.0	Jan.	25	1.0	Feb.	22	2.5	Mar.	22	4.1
	21	12.2	Feb.	2	0.8		27	6.6	May	1	0.2
	22	10.4		3	12.4		28	0.8		8	5.6
	23	0.5		4	12.7	Mar.	2	2.5		9	8.4
Jan.	2	9.6		5	0.8		10	16.5			
	3	3.0		20	0.8		11	0.5			
	9	29.7		21	11.4		21	7.9			

PRECIPITATION IN MILLIMETERS AT KANDAHAR, AFGHANISTAN

1948

Nov.	14	3.0	Feb.	1	9.4	Mar.	7	7.1	Apr.	10	0.8
Dec.	4	2.3		18	3.3		10	13.0		17	0.2
	5	10.4		19	7.6		17	2.3		18	1.0
	10	21.6		25	4.1		25	2.8		20	1.8
Jan.	27	5.3	Mar.	2	3.0	Apr.	8	7.6			
	28	4.8		6	5.1		9	1.8			

1949

Dec.	19	3.0	Jan.	28	0.2	Mar.	6	1.8	Mar.	11	5.3
	26	0.2	Feb.	1	4.6		7	0.5	Apr.	5	3.3
	30	3.0		2	16.5		8	6.9		6	4.8
Jan.	14	4.1		3	1.0		9	37.3		9	1.5
	24	0.8		21	4.8		10	33.0	Aug.	5	0.8

1950

Nov.	25	0.5	Jan.	13	1.0	Feb.	8	9.9	Apr.	1	5.1
	26	3.8		18	7.9	Mar.	10	0.5		2	9.9
Dec.	9	2.5		26	2.8		13	18.3	May	7	1.5
	12	3.3		28	46.2		19	3.6		8	1.3
	15	0.5		29	35.6		20	9.4		9	3.0
	31	2.0	Feb.	5	7.1		28	1.8		10	1.9
Jan.	11	1.5		6	7.9		29	13.0			
	12	10.2		7	5.8						

1951

Nov.	29	0.8	Feb.	9	2.5	Mar.	17	7.9	Apr.	1	14.2
Jan.	5	12.2	Mar.	5	0.8		18	4.1		23	0.5
	8	T		6	6.1		22	4.1	May	4	2.3
	10	3.6		8	0.8		23	0.8		5	36.1
Feb.	5	0.2		9	1.3		24	9.1		6	8.4
	6	2.8		10	3.6		25	3.6		7	32.0
	7	40.6		15	6.4		29	15.4			
	8	21.8		16	6.4		31	4.3			

PRECIPITATION IN MILLIMETERS AT KANDAHAR, AFGHANISTAN

1952

Dec.	25	1.3	Jan.	28	9.1	Mar.	4	T	Apr.	26	1.0
	26	11.4		29	4.5		12	19.0	May	1	1.0
	27	2.3	Feb.	2	2.5		13	1.0		9	T
Jan.	4	1.5		3	0.5		20	3.0		13	T
	5	6.0		12	4.0		25	T	July	20	T
	6	11.5		13	15.5		26	6.0		21	T
	12	7.0		14	12.3	Apr.	4	5.0			
	19	8.0		28	1.0		5	3.0			
	26	1.0	Mar.	3	2.0		16	0.5			

1953

Oct.	5	T	Feb.	4	5.0	Feb.	12	8.0	Mar.	24	5.5
Nov.	29	T		7	7.0		13	12.5	Apr.	11	2.0
Jan.	14	18.5		8	2.5		14	9.0		12	7.0
	15	1.5		9	12.5	Mar.	4	0.5	June	1	1.0
	18	1.0		10	26.5		5	0.5			
Feb.	3	5.0		11	T		22	0.5			

1954

Nov.	2	T	Feb.	1	0.5	Feb.	18	5.0	Apr.	12	2.0
	23	T		4	T		25	T		16	T
	28	T		9	10.0		28	1.5		20	T
Jan.	5	35.0		10	9.0	Mar.	1	4.0		21	T
	6	3.0		11	7.0		9	3.0		22	2.0
	7	7.2		12	19.5		10	5.0		23	6.0
	10	0.2		13	8.0		29	2.0			
	29	21.5		15	1.0		30	28.0			
	30	5.0		17	6.0		31	T			

Daily record not available for January 1955 to January 1956.

1956

Feb.	1	1.5	Mar.	13	0.8	Mar.	31	0.2	July	17	2.0
	7	7.0		14	1.0	Apr.	1	0.5		21	1.5
	25	5.2		18	6.5		6	1.8		23	1.0
	26	11.2		19	19.5		7	9.2		24	5.0
	27	1.2		23	32.2		20	0.5		28	9.5
	28	T		28	0.8	July	13	T			
Mar.	3	1.2		29	5.0		15	11.8			
	4	13.5		30	6.2		16	9.8			

T - Trace

PRECIPITATION IN MILLIMETERS AT KANDAHAR, AFGHANISTAN

1957

Dec.	23	9.0	Jan.	25	4.0	Mar.	17	16.5	Apr.	13	1.0
	31	10.0	Feb.	1	16.5		20	0.2		14	T
Jan.	1	0.2		2	1.8		21	5.0		25	0.5
	3	0.5		5	2.0		22	5.0		26	0.5
	7	14.0		12	T		27	6.0		28	3.5
	8	6.5		17	T		31	0.2		30	3.0
	12	40.0	Mar.	1	T	Apr.	1	9.8	May	1	3.0
	19	1.0		8	3.2		3	3.0		2	0.8
	20	0.5		9	0.5		5	20.8		3	4.0
	24	31.0		16	T		12	T		9	0.2

1958

Nov.	6	2.8	Dec.	8	T	Jan.	24	2.0	Mar.	27	3.5
	11	0.5		9	12.0		25	0.2		31	0.2
	12	6.0		10	13.0		31	4.0	Apr.	14	T
	18	39.5	Jan.	6	0.2	Feb.	16	1.0		15	5.0
	22	0.5		9	11.2		25	5.5	May	21	1.0
	24	5.8		10	0.5		26	0.5	July	11	T
Dec.	5	22.5		19	2.0	Mar.	5	T		12	1.5
	7	14.5		20	2.5		10	1.0		13	0.2

1959

Nov.	10	T	Jan.	15	4.8	Feb.	17	16.0	Mar.	28	T
Dec.	10	10.2		17	6.8		22	7.2	Apr.	1	6.0
	11	12.2		18	0.2		26	3.5		2	12.2
	12	0.5		22	0.2		28	17.8		20	1.0
	19	9.5		23	18.0	Mar.	1	6.5		21	0.5
	20	20.5		24	0.2		8	1.5	May	17	0.2
Jan.	2	6.0	Feb.	2	2.0		9	6.5	June	2	T
	3	10.0		9	14.5		24	1.0	July	2	T

1960

Nov.	1	T	Nov.	27	10.8	Dec.	15	10.2	Jan.	31	1.8
	2	1.0		30	4.5		16	3.2	Feb.	14	0.8
	4	9.5	Dec.	1	1.5	Jan.	10	3.8		21	1.0
	5	6.0		2	8.0		12	0.5			
	26	T		14	4.0		28	1.2			

T - Trace

Monthly and annual precipitation, in millimeters, at Kandahar, Afghanistan

Year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Annual
1940				124.4	26.1	13.3	1.8	0	0	0	0	0	
1941	0.8	0	41.2	53.4	7.1	3.0	30.8	0	0	0	0	0	136.3
1942	0	0	13.7	63.9	107.8	31.4	4.5	4.6	1.5	12.7	0	0	240.1
1943	0.8	7.4	11.7	134.1	8.6	54.0	22.0	5.1	0	0	0	0	243.7
1944	0	0	15.4	67.0	96.1	6.6	0.8	2.5	0	11.7	0.2	0	198.3
1945	0	3.6	17.9	44.9	8.1	1.6	14.0	4.1	0	0	0	0	94.2
1946	0	0	20.1	107.4	35.2	19.2	0	0.5	0	0	0	0	182.4
1947	0	0	26.1	43.3	48.8	31.5	0	14.2	0	0	0	0	163.9
1948	0	3.0	34.3	10.1	24.4	33.3	15.2	0	0	0	0	0	118.3
1949	0	0	6.2	5.1	26.9	84.8	9.6	0	0	0	0.8	0	133.4
1950	0	4.3	8.3	105.2	30.7	46.6	15.0	7.6	0	0	0	0	217.7
1951	0	0.8	0	15.8	67.9	72.2	14.7	78.8	0	0	0	0	250.2
1952	0	0	15.0	48.6	35.8	31.0	9.5	1.0	0	T	0	0	140.9
1953	T	T	0	21.0	88.0	7.0	9.0	0	1.0	0	0	0	126.0
1954	0	T	0	71.9	67.5	42.0	10.0	0	0	0	0	0	191.4
1955	0	0	0	48.0	0	21.8	0	1.5	0	0	0	0	71.3
1956	0	0	66.1	e60.0	26.1	86.9	12.0	0	0	40.6	0	e0	291.7
1957	e0	0	19.0	97.7	20.3	36.6	42.1	8.0	0	0	0	0	223.7
1958	0	55.1	62.0	22.6	7.0	4.7	5.0	1.0	e0	1.7	0	0	159.1
1959	0	T	52.9	46.2	61.0	15.5	19.7	0.2	T	T	e0	e0	195.5
1960	0	31.8	26.9	7.3	1.8								
Ave.	0.1	5.3	21.7	57.1	37.9	32.2	11.7	6.5	0.1	3.3	0.05	0	177.8

T - Trace

Monthly and annual evaporation, in millimeters, at Kandahar, Afghanistan

Year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Annual
1951						95	152	192	226	220	200	165	
1952	148	114	53	71	115	146	175	220	251	265	260	157	1955
1953	72	67	46	46	48	124	176	e226	e253	285	277	219	1839
1954	137	81	47	59	22	78	155	271	287	302	280	218	1937
1955	123	75	49	25	43	79	150	191	211	229	221	170	1566
1956	63	48	36	e37	43	58	139	233	244	204	257	e183	1545
1957	e112	58	42	24	54	83	118	197	258	259	237	155	1597
1958	117	34	20	26	50	114	180	274	e253	278	279	196	1821
1959	118	57	36	19	30	78	144	229	293	292	e251	207	1754
1960	119	39	16	28	50								
Ave.	112	64	38	37	51	95	154	226	253	259	251	183	1752

e - Estimated.

KAJAKAI RESERVOIR, AFGHANISTAN

Temperature, Precipitation, Evaporation

Location.—Observation station is on left bank of Helmand River about 100 meters upstream from highway bridge about 2 kilometers downstream from Kajakai dam. Lat 32° 18' N., long 65° 06' E., about 60 kilometers north of Girishk and about 90 kilometers northwest of Kandahar.

Equipment.—Rain gage: A standard 8-inch non-recording U.S. Weather Bureau rain gage can and measuring stick.

Thermometers: Maximum and minimum thermometers and support in a standard wooden shelter.

Evaporation pan: Pan is of welded steel plate 36 inches square and 19-3/4 inches deep set in ground. Water surface was read from a reference point on the top edge of the pan.

Averages and extremes for period of record.—

February 1956 to September 1960

Temperatures:	Average daily maximum	34.0°C
	Average daily minimum	11.6°C
	Maximum	48.9°C
	Minimum	-12.2°C
Precipitation:	Average yearly	197.8 millimeters
Evaporation:	Average yearly pan	2391 millimeters

Monthly and annual average maximum and minimum and maximum and minimum Temperatures in degrees centigrade

at Kajakai Reservoir at Kajakai, Afghanistan

Year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Annual
1956 Ave.					18.3	21.7	28.4	40.6	41.2	41.2	38.9	-	
Ave.					1.7	8.3	12.8	14.4	18.9	23.3	18.3		
Max.					23.3	26.1	36.7	43.9	45.0	45.6	43.3		
Min.					-5.6	5.0	2.8	10.6	14.4	18.9	14.4		
1957 Ave.	29.8	23.9	16.1	10.0	15.6	21.1	22.8	31.7	38.3	41.2	40.0	32.8	26.9
Ave.	7.2	1.7	0.6	1.7	2.2	5.0	7.8	13.9	17.8	20.0	17.2	10.6	8.8
Max.	-	27.8	23.3	17.8	21.1	26.7	27.8	38.9	41.2	45.6	42.8	35.0	45.6
Min.	-	-0.6	-3.9	-1.1	-2.2	3.3	6.1	9.4	15.0	16.7	12.8	8.9	-3.9
1958 Ave.	28.4	20.7	15.2	14.2	18.0	25.5	32.2	34.3	40.3	41.7	39.8	36.6	29.0
Ave.	7.2	5.6	2.9	3.6	1.6	7.8	12.7	13.5	17.3	20.3	16.9	11.9	10.1
Max.	35.6	27.3	21.1	18.9	22.2	32.2	37.3	38.9	43.3	45.6	44.4	41.2	45.6
Min.	1.1	-1.1	-2.2	-2.2	-2.2	-1.1	6.7	10.0	11.1	16.1	12.2	6.7	-2.2
1959 Ave.	29.0	19.3	17.3	14.5	15.4	21.9	30.4	34.8	39.9	41.4	42.0	37.7	28.7
Ave.	6.1	-1.3	2.6	0.6	0.6	6.2	10.4	14.5	16.3	19.2	18.1	13.2	8.9
Max.	32.2	27.8	24.5	17.8	22.2	30.0	34.5	40.0	42.2	44.4	45.6	40.0	45.6
Min.	1.1	-5.6	-2.2	-4.4	-5.6	0.0	5.6	8.9	12.2	15.6	15.6	10.0	-5.6
1960 Ave.	32.1	21.0	13.1	17.1	26.6	29.0	e28.4	e35.5	43.7	38.0	31.9	28.5	28.7
Ave.	8.4	3.8	-0.8	-1.3	0.4	20.1	e10.9	e14.1	19.2	17.6	18.2	18.2	10.7
Max.	37.8	25.6	17.2	20.6	31.1	36.7	-	-	46.1	48.9	37.3	33.9	48.9
Min.	5.0	1.7	-10.0	-12.2	-6.1	14.4	-	-	10.6	13.4	15.0	-1.1	-12.2
Period Ave.	29.8	21.4	15.4	14.0	18.3	23.8	28.4	35.5	40.3	40.7	38.5	27.1	34.0
Ave.	7.2	2.4	1.3	1.2	1.3	9.5	10.9	14.1	18.1	20.1	17.7	10.8	11.6
Max.	37.8	27.8	24.5	20.6	31.1	36.7	37.8	43.9	46.1	48.9	45.6	41.2	48.9
Min.	1.1	-5.6	-10.0	-12.2	-6.1	-1.1	2.8	8.9	10.6	13.4	12.2	-1.1	-12.2

e - Estimated.

PRECIPITATION IN MILLIMETERS AT KAJAKAI RESERVOIR, AFGHANISTAN

1956

Feb.	24	17.	Mar.	5	23.	Mar.	24	51.	Apr.	15	2.
	25	1.		13	70.		28	5.	July	16	14.
	26	2.		15	20.		29	20.		24	2.
	27	3.		17	18.	Apr.	7	6.		25	1.
Mar.	3	20.		18	10.		8	8.		28	1.

No record October, November, December, January and September.

1957

Dec.	24	12.	Jan.	20	11.	Mar.	8	10.	Apr.	28	5.
	31	5.		23	2.		16	35.		29	3.
Jan.	3	3.		24	53.		17	13.	May	2	1.
	6	10.		25	6.		22	2.		3	5.
	7	3.	Feb.	1	8.		26	13.		4	2.
	8	7.		5	5.		27	10.		10	6.
	12	40.		7	2.	Apr.	4	15.			
	18	2.		8	2.		5	8.			
	19	3.		28	3.		10	1.			

No record for October.

1958

Nov.	18	24.	Dec.	2	5.	Dec.	27	2.	Jan.	25	3.
	19	19.		5	17.		29	5.		31	27.
	22	5.		7	15.	Jan.	9	20.	Mar.	27	8.
	23	7.		9	6.		19	8.			
	24	5.		10	13.		24	2.			

1959

Dec.	9	7.5	Jan.	17	2.5	Feb.	27	2.	Apr.	2	9.
	10	7.5		23	15.		28	30.		21	8.5
Jan.	2	18.	Feb.	9	10.	Mar.	1	10.	May	17	15.
	3	2.		19	22.		10	10.			
	14	2.5		26	4.		27	4.			

1960

Nov.	4	10.	Dec.	13	5.	Mar.	4	1.5	Mar.	12	12.
	26	17.		14	7.		9	8.		26	19.
	29	2.		15	4.		11	5.			

No record for April and May.

Monthly and annual precipitation, in millimeters, at Kajakai Reservoir at Kajakai, Afghanistan

Year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Annual
1956					23.0	237.0	16.0	0	0	18.0	0		
1957	e0	0	17.0	140.0	20.0	83.0	32.0	14.0	0	0	0	0	306.0
1958	0	60.0	63.0	60.0	0	8.0	0	0	0	0	0	0	191.0
1959	0	0	15.0	40.0	68.0	24.0	17.5	15.0	0	0	0	0	179.5
1960	0	29.0	16.0	0	0	45.5	e16.0	e8.0	0	0	0	0	114.5
Ave.	0	22.2	27.8	60.0	22.2	79.5	16.5	7.4	0	3.6	0	0	197.8

Monthly and annual pan evaporation in millimeters at Kajakai Reservoir, Afghanistan

Year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Annual
1956					86	71	181	306	405	370	389	-	
1957	e214	162	91	40	84	81	130	197	280	330	331	266	2206
1958	176	92	46	81	87	152	227	306	379	390	368	302	2606
1959	202	102	54	47	67	122	221	270	343	430	397	300	2555
1960	264	166	91	76	88	143	e190	e270	347	387	103	73	2198
Ave.	214	130	70	61	82	114	190	270	351	381	318	235	2391

e - Estimated.

LASHKAR GAH, AFGHANISTAN

Temperature, Precipitation, Evaporation, Wind Velocity, Humidity

Location.—Observation station is 70 feet south of south end of United States Operations Staff House in Lashkar Geh. Lat.31° 33' N., long. 64° 18' W., on east bank of Helmand River about 8 kilometers upstream from Arghandab River.

Equipment.—Rain gage: A standard 8-inch non-recording U.S. Weather Bureau rain gage can and measuring stick.

Thermometers: Maximum and minimum Thermometers and support and a hydrothermograph for recording air temperature and humidity are in a wooden shelter.

Evaporation pan: Pan is galvanized iron, round pan, 10 inches deep and 48 inches in diameter with an enamel gage calibrated to centimeters at one side. The pan sets on a brick base on the ground. Pan water is read to millimeters each day and has been refilled when level drops as much as 100 millimeters.

A five foot high woven wire fence encloses a 12 x 14 ft. area where above equipment is located.

Anemometer is located on the roof of the Helmand Valley Authority Clubhouse and is read daily in kilometers.

Averages and extremes for period of record.—

January 1955 to September 1960

Temperatures:	Average daily maximum	28.9°C
	Average daily minimum	11.5°C
	Maximum	46.3°C
	Minimum	-6.0°C
Precipitation:	Average yearly	135.5 millimeters
Evaporation:	Average yearly pan	2772 millimeters
Wind:	Average velocity	190 kilometers per day
	Maximum velocity	875 kilometers per day
Humidity:	Average daily high	61.8%
	Average daily low	20.7%

Monthly and annual average maximum and minimum and maximum and minimum Temperatures in degrees centigrade

at Lashkar Gah, Afghanistan

Year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Annual
	Note: January 1955 from records at Girishk; February to October 1955 from records at Chah-i-Anjir												
1955 Ave.				13.7	19.8	24.4	29.4	33.7	38.9	43.0	40.9	36.3	
Ave				1.7	3.6	10.1	11.3	17.0	20.1	23.5	21.3	13.7	
Max.				19.0	25.2	29.0	35.0	37.8	42.0	46.3	45.7	40.3	46.3
Min.				-2.0	-3.0	3.5	3.2	11.0	14.8	17.2	15.5	8.0	-3.0
1956 Ave.	27.1	24.4	15.0	13.6	18.5	21.1	30.0	39.2	39.1	40.5	39.4	36.7	25.5
Ave.	6.6	3.9	3.4	1.5	2.9	8.8	14.1	17.7	20.7	25.9	20.0	16.0	11.8
Max.	31.4	31.0	22.2	20.0	23.4	27.7	36.7	46.0	45.0	44.7	42.5	41.8	46.0
Min.	3.1	0.8	-1.3	-2.4	-3.8	2.9	3.5	13.3	16.2	20.9	16.1	13.5	-3.8
1957 Ave.	28.3	23.4	16.0	11.0	16.0	23.5	25.1	32.9	38.2	40.9	39.0	33.7	27.3
Ave.	7.4	3.0	0.9	2.3	2.0	8.7	11.7	16.5	20.4	21.3	18.8	12.2	10.4
Max.	32.9	27.5	22.6	19.0	21.9	28.4	32.0	40.2	41.1	45.2	43.0	35.5	45.2
Min	4.3	-0.2	-4.6	-1.6	-2.4	2.3	5.0	11.9	17.5	16.7	15.0	9.5	-4.6
1958 Ave.	28.8	20.9	14.8	16.4	19.2	27.2	33.5	34.5	40.8	41.9	39.6	36.6	29.5
Ave.	8.4	5.7	4.0	4.0	3.0	10.1	15.2	17.2	21.2	23.2	19.8	15.4	12.3
Max.	35.5	27.1	23.2	21.2	24.5	32.7	39.7	38.2	43.4	45.5	44.0	40.3	45.5
Min.	1.2	-1.5	-2.5	-1.0	-2.6	1.9	9.0	12.0	16.5	17.0	14.0	10.0	-2.6
1959 Ave.	30.4	19.4	17.8	13.7	15.4	25.3	31.8	35.7	40.7	41.7	42.4	38.7	29.4
Ave.	8.7	0.7	4.0	1.1	1.9	9.2	14.0	17.4	20.8	23.4	22.9	17.2	11.8
Max.	34.9	28.5	27.3	19.5	25.0	33.0	37.5	42.4	44.9	44.6	44.6	41.3	44.9
Min.	2.4	-4.5	-0.2	-3.8	-4.1	2.1	8.2	11.5	17.6	19.5	19.0	11.0	-4.5
1960 Ave.	32.8	21.6	13.1	17.1	23.7	22.2	27.4	35.3	42.4	42.1	41.8	36.6	29.7
Ave.	10.7	5.5	0.1	0.7	4.5	6.4	11.7	16.5	21.6	22.9	19.6	15.0	11.3
Max.	38.0	28.4	18.4	24.8	29.0	30.7	38.5	42.5	45.6	44.7	45.0	42.7	45.6
Min.	6.0	1.5	-6.0	-3.9	-2.5	-3.1	2.9	8.9	16.5	17.8	16.2	10.0	-6.0
Period Ave.	29.5	21.9	15.3	14.2	18.9	24.0	29.5	35.2	40.0	41.7	40.5	36.4	28.9
Ave.	8.4	3.8	2.7	1.9	2.9	10.6	13.0	17.0	20.8	23.4	20.4	14.9	11.5
Max.	38.0	31.0	27.3	24.8	29.0	33.0	39.7	46.0	45.6	46.3	45.7	42.7	46.3
Min.	1.2	-4.5	-6.0	-3.9	-4.1	-3.1	2.9	8.9	14.8	16.7	14.0	8.0	-6.0

PRECIPITATION IN MILLIMETERS AT LASHKAR GAH, AFGHANISTAN

1958

Nov.	6	2.3	Dec.	4	T	Jan.	20	T
	7	T		6	6.3		21	0.8
	12	2.0		7	4.3		24	0.5
	13	T		8	T		25	0.5
	19	11.4		10	17.3		31	10.4
	20	T		11	7.9	Feb.	25	1.2
	24	15.7		29	T	Mar.	11	T
	25	T		30	5.1		27	T
Dec.	3	1.3	Jan.	8	11.2		28	0.8

Apr.	15	0.8						
	16	T						
	19	T						
July	11	T						
	13	5.8						
	14	T						

1959

Nov.	10	T	Jan.	18	23.9	Mar.	8	1.8
Dec.	11	5.3		23	T		9	1.8
	12	3.0		24	5.3		24	T
	20	13.0	Feb.	9	7.6		26	T
	21	0.2		18	2.5		27	1.3
Jan.	3	4.3		28	6.3	Apr.	1	9.6
	15	3.3	Mar.	1	0.5		2	1.8

Apr.	20	1.8			
	21	0.2			
May	12	T			
	13	0.8			
	16	0.5			

1960

Oct.	31	T	Dec.	14	1.3	Mar.	13	1.5
Nov.	1	T		15	7.1		15	1.5
	4	1.5		16	5.6		20	1.5
	5	0.8	Jan.	10	0.2		21	3.8
	24	T		11	5.8		26	6.6
	26	T	Feb.	2	T		27	0.8
	27	5.6		11	T	Apr.	3	0.8
	30	6.1		14	T		12	2.3
Dec.	1	1.5	Mar.	10	5.6		13	1.3
	2	18.3		12	3.0		14	4.6

Apr.	15	T			
	16	11.9			
	17	2.3			
	18	0.8			
	21	5.6			
	22	3.0			
	23	T			
May	1	T			
June	22	T			

T - Trace

PRECIPITATION IN MILLIMETERS AT LASHKAR GAH, AFGHANISTAN

1955

Jan.	2	0.8	Jan.	24	0.8	Mar.	11	1.2	Apr.	11	T
	5	5.1		28	2.0		12	T	May	4	T
	6	16.5		29	2.0		13	3.6		6	0.2
	10	1.5		30	2.3		14	12.2		8	T
	11	T	Feb.	3	2.3		15	0.2		10	T
	20	3.3	Mar.	10	T		28	0.2			

1956

Dec.	5	T	Jan.	10	0.8	Mar.	5	6.9	Apr.	6	2.8
	6	6.3		12	1.8		13	2.8		7	20.1
	7	5.3		14	T		14	10.4		20	T
	8	T		15	0.8		18	4.6		23	T
	9	8.6		16	T		19	4.8	July	16	4.1
	13	24.1		26	T		21	3.8		18	0.8
	14	5.1	Feb.	1	2.0		22	T		23	0.8
	15	0.5		12	T		23	22.9		25	19.3
	18	T		25	1.3		24	T		26	T
	20	0.2		26	1.5		28	T		29	0.2
Jan.	1	7.6		27	0.5		29	6.3			
	2	7.1		28	2.5		30	6.3			
	3	T	Mar.	4	2.8	Apr.	1	T			

1957

Oct.	30	T	Jan.	9	4.3	Feb.	6	4.6	Apr.	6	0.2
	31	8.9		10	0.2	Mar.	9	7.1		25	0.2
Dec.	13	T		12	0.2		17	9.1		29	T
	23	0.5		13	21.3		18	8.4		30	3.8
	24	2.0		14	0.5		21	0.5	May	1	0.5
	31	1.2		19	0.8		27	5.3		2	T
Jan.	1	9.4		20	1.2		30	0.2		4	T
	3	0.8		25	23.4		31	0.2		11	1.2
	4	0.2		26	1.2	Apr.	1	T			
	7	13.7	Feb.	2	8.6		4	4.8			
	8	5.3		3	2.8		5	18.3			

T - Trace

Monthly and annual precipitation, in millimeters, at Lashkar Gah, Afghanistan

Year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Annual
1955				34.3	2.3	17.4	T	0.2	0	0	0	0	
1956	0	0	50.1	18.1	7.8	71.6	22.9	0	0	25.2	0	0	195.7
1957	8.9	0	3.7	82.5	16.0	30.8	27.3	1.7	0	0	0	0	170.9
1958	0	31.4	42.2	23.4	1.2	0.8	0.8	0	0	5.8	0	0	105.6
1959	0	0	21.5	36.8	16.4	5.4	13.4	1.3	0	0	0	0	94.8
1960	T	14.0	33.8	6.0	T	24.3	32.6	T	T	0	0	0	110.7
Ave.	1.8	9.1	30.3	33.5	7.3	25.0	16.2	0.5	0	5.2	0	0	135.5

Monthly and annual evaporation, in millimeters, at Lashkar Gah, Afghanistan

Year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Annual
	Note: April to October 1955 from records at Chah-i-Anjir These are observed pan evaporation readings.												
1955							306	386	467	446	385	276	
1956	201		104	98	141	174	262	421	493	422	392	295	3003
1957	185	115	87	130	105	171	196	294	372	379	331	239	2602
1958	191	139	94	77	108	216	274	354	395	405	356	254	2863
1959	185	105	88	103	112	190	252	321	384	406	359	259	2762
1960	186	114	75	80	137	174	224	325	389	376	334	237	2629
Ave.	190	118	90	98	120	185	252	350	413	406	360	260	2772

T - Trace

Monthly and annual average wind velocity and maximum velocity, in kilometers, per day at Lashkar Gah Afghanistan

Year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Annual
	Note: July to October 1955 from records at Chah-i-Anjir												
1955										164	116	76	
										304	224	257	
1956	66		198	162	219	205	234	190	236	198	169	147	184
	102		612	359	495	329	739	453	538	397	244	249	739
1957	180	145	206	211	219	204	217	235	259	198	183	153	201
	319	352	796	413	409	555	465	376	482	367	323	223	796
1958	140	202	157	198	195	218	185	243	216	189	203	192	195
	571	467	439	521	728	533	402	368	720	331	364	296	728
1959	182	176	185	204	285	227	201	210	233	215	185	160	205
	351	522	327	453	583	456	340	571	496	417	295	267	585
1960	145	160	150	169	156	238	220	211	166	129	136	114	164
	295	341	341	379	292	505	536	559	340	283	875	237	875
Ave.	142	171	175	189	214	218	211	218	222	182	165	140	190
Max.	571	522	796	521	728	555	739	571	720	417	875	296	875

Monthly and annual average relative humidity - high and low, in percent, at Lashkar Gah, Afghanistan

Year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Annual
	Note: January 1955 are records at Girishk and February to October 1955 are records at Chah-i-Anjir												
1955				79.3	51.6	56.7	33.0	43.3	35.7	24.4	37.4	37.5	
				56.2	27.9	30.0	17.2	17.7	13.6	9.5	13.7	14.1	
1956	47.3	64.6	89.3	91.7	78.2	92.2	78.7	50.2	40.2	60.9	41.1	47.0	65.1
	19.2	24.1	40.4	35.5	21.8	35.2	22.7	13.3	16.3	21.7	11.8	15.3	23.1
1957	54.9	56.2	68.0	83.5	77.5	75.4	76.5	59.8	45.1	40.5	47.0	46.9	60.9
	19.4	15.5	27.5	43.5	19.5	18.0	21.4	15.2	14.7	16.0	16.8	18.8	20.5
1958	58.1	75.3	86.7	82.1	76.0	54.1	51.8	45.4	37.6	38.5	38.9	46.7	57.6
	24.2	28.6	41.0	29.8	14.5	14.0	14.4	16.3	14.4	14.1	13.9	16.6	20.2
1959	46.3	59.9	87.9	94.5	86.4	79.8	68.6	59.4	40.1	40.7	42.8	63.5	64.2
	19.0	27.8	41.9	33.0	23.9	19.3	16.9	14.8	12.1	15.9	23.3	15.3	21.9
1960	55.4	76.3	92.7	79.7	69.4	69.9	72.7	50.6	e39.7	40.0	42.0	48.0	61.4
	17.9	23.1	31.9	19.7	14.2	13.9	16.8	11.8	e14.2	16.9	14.8	16.3	17.6
Ave.	52.4	66.5	84.9	85.1	73.2	71.3	63.6	51.4	39.7	40.8	41.5	48.3	61.8
Ave.	19.9	23.8	36.5	36.3	20.3	21.7	18.2	14.8	14.2	15.7	15.7	16.1	20.7

e - estimated.

MARJA, AFGHANISTAN

Temperature, Precipitation, Evaporation

Location.--Observation station is at radio tower near office building 200 meters west of east entrance to Marja. Lat 31° 30' N., long 64° 02' E., about 25 kilometers west of Lashkar Gah about 48 kilometers southwest of Girishk.

Equipment.--Rain gage: A standard 8-inch non-recording U.S. Weather Bureau rain gage can and measuring stick.

Thermometers: Maximum and minimum thermometers and support are in a standard wooden shelter. Centigrade scales.

Evaporation pan: Pan was iron, 85 cm. in diameter, 30 cm. deep and set in ground. Depth of water over reference point was read to millimeters daily. Pan was refilled when water level dropped as much as 100 millimeters.

Averages and extremes for period of record:--

February 1955 to May 1957

Temperatures:	Average daily maximum	28.9°C
	Average daily minimum	13.0°C
	Maximum	48.4°C
	Minimum	-3.3°C
Precipitation:	Average yearly	159.9 millimeters
Evaporation:	Average yearly pan	3145 millimeters

Monthly and annual average maximum and minimum and maximum and minimum Temperatures in degrees centigrade

at Marja, Afghanistan

Year		Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Annual
1955	Ave.				Started	22.3	24.8	30.0	33.9	37.8	41.7	38.9	35.2	
	Ave.					7.7	14.0	16.1	20.3	22.8	26.7	23.9	18.5	
	Max.					27.2	27.8	35.6	37.8	41.7	46.1	44.4	38.7	
	Min.					-2.2	7.2	10.0	16.1	17.2	22.2	19.4	14.0	
1956	Ave.	27.2	22.5	16.5	15.2	19.4	21.7	30.6	41.4	41.7	41.2	40.0	38.0	29.6
	Ave.	11.4	7.8	5.4	1.5	3.7	9.2	14.4	19.4	21.4	26.1	20.0	16.2	13.0
	Max.	32.0	28.0	22.0	21.7	25.6	28.9	36.7	48.4	46.7	45.0	43.3	41.2	48.4
	Min.	7.2	4.4	0.0	-2.8	-2.2	2.8	3.9	15.0	17.8	22.2	17.2	14.4	-2.8
1957	Ave.	30.2	24.4	16.1	11.1	16.1	23.8	26.1	34.5	Closed				
	Ave.	7.9	4.0	0.6	2.0	1.7	8.9	12.2	16.7					
	Max.	37.8	28.4	22.8	20.0	22.8	28.4	31.1	41.2					
	Min.	5.0	0.6	-3.3	-2.2	-2.8	3.3	5.0	12.2					
Ave.	Max.	28.7	25.4	16.3	13.2	19.3	23.4	28.9	36.6	39.8	41.4	39.4	36.6	28.9
Ave.	Min.	9.6	5.8	3.0	1.8	4.4	10.7	14.2	18.8	22.1	26.4	22.0	17.4	13.0
	Max.	37.8	28.4	22.8	21.7	25.6	28.9	36.7	48.4	46.7	46.1	44.4	41.2	48.4
	Min.	5.0	0.6	-3.3	-2.8	-2.8	2.8	3.9	12.2	17.2	22.2	17.2	14.0	-3.3

PRECIPITATION IN MILLIMETERS AT MARJA, AFGHANISTAN

1955

Jan.	4	5.0	Jan.	19	2.5	Mar.	13	1.6	Mar.	24	T
	5	19.0	Mar.	4	1.5		14	6.9	May	25	T
	10	1.0		11	1.1		23	T			

1956

Dec.	5	T	Jan.	12	T	Mar.	14	3.5	Apr.	2	1.0
	6	5.0		14	1.8		15	5.6		7	0.7
	9	9.0		15	1.0		19	8.3		8	7.4
	12	27.0	Feb.	1	T		20	5.4		9	0.5
	13	3.5		25	0.6		21	5.5		20	T
	14	0.5		26	0.4		22	0.5	July	15	10.5
	15	T		28	0.4		24	19.5		24	2.4
	20	T	Mar.	4	2.8		25	T			
Jan.	1	10.0		5	6.5		29	T			
	2	4.3		13	T		30	16.3			

1957

Oct.	29	T	Jan.	12	23.5	Mar.	8	7.4	Apr.	5	T
	30	12.1		18	T		9	T		13	1.0
Dec.	23	2.7		19	T		16	13.0		14	0.5
	30	1.1		23	T		17	11.3		30	T
	31	6.5		24	23.3		26	4.2	May	1	5.5
Jan.	2	0.8		25	T		27	T		9	T
	6	12.5	Feb.	1	8.0		29	T		10	T
	7	5.5		2	2.0	Apr.	3	7.7			
	8	2.8		5	1.0		4	16.4			

T - Trace

Monthly and annual precipitation, in millimeters, at Marja, Afghanistan

Year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Annual
1955				27.5	0	11.1	0	T	0	0	0	0	
1956	0	0	45.0	17.1	1.4	73.9	9.6	0	0	12.9	0	0	159.9
1957	12.1	0	10.3	68.4	11.0	35.9	25.6	5.5					
Ave.	6.0	0	27.6	37.7	4.1	40.3	11.7	1.8	0	6.4	0	0	

T - Trace

Monthly and annual evaporation in millimeters at Marja, Afghanistan

Year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Annual
1955				Started	137	176	284	392	421	480	476	357	a3315
1956	240	178	102	108	141	161	249	458	468	446	431	354	3336
1957	219	155	111	70	111	179	231	392	Closed				b2785
Ave.	230	166	106	89	130	172	255	414	444	463	454	356	3145

a - Used average of 1956, 1957 for October to January.
b - Used average of 1955, 1956 for June to September.

NAD-I-ALI, AFGHANISTAN

Temperature, Precipitation, Evaporation, Wind Velocity, Humidity

Location.--Observation station was at Nad-i-Ali Agriculture Training School. Lat 31° 38' N., long 64° 15' E. about 12 kilometers northwest of Lashkar Gah and 56 kilometers southwest of Girishk.

Equipment.--Rain gage: A standard 8-inch non-recording U.S. Weather Bureau rain gage can and measuring stick.

Thermometers: Maximum and minimum thermometers and support and a hydrothermograph for recording air temperature and humidity in a standard wooden shelter.

Evaporation pan: Pan was of welded steel plate, 36 inches square and 19 3/4 inches deep set on bricks on the ground.

Anemometer was mounted on a steel frame near the evaporation pan and about 5 feet above it. It was calibrated in kilometers and returned to zero after each 990 kilometers.

Averages and extremes for period of record.--

		June 1954 to March 1957 February to May 1958
Temperatures:	Average daily maximum	28.4°C
	Average daily minimum	12.0°C
	Maximum	46.0°C
	Minimum	-8.0°C
Precipitation:	Average yearly 3 years	113 millimeters
Evaporation:	Average yearly pan 2 years	2298 millimeters
Wind:	Average velocity 2 years	180 kilometers per day
	Maximum velocity	997 kilometers per day
Humidity:	Average daily high 1956	74.0%
	Average daily low	24.3%

Monthly and annual average maximum and minimum and maximum and minimum temperatures in degrees centigrade

at Nad-i-Ali, Afghanistan

Year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Annual
1954 Ave.									40.0	40.8	38.3	35.0	
Ave.									20.7	22.8	19.6	17.7	
Max.									44.0	44.0	41.6	40.0	
Min.									11.0	19.0	12.0	12.0	
1955 Ave.	e28.0	21.9	16.7	13.8	20.0	24.5	29.1	33.2	38.2	42.0	40.8	36.6	28.7
Ave.	e9.4	6.2	0.2	1.7	3.2	9.0	9.8	17.0	18.9	23.9	23.4	15.3	11.5
Max.	-	28.5	20.0	20.0	26.0	29.3	34.5	37.5	41.3	46.0	45.5	40.2	46.0
Min.	-	0	-5.1	-2.0	-2.0	3.5	2.0	12.5	11.5	17.0	16.0	9.0	-5.1
1956 Ave.	27.3	24.0	16.1	12.8	17.8	20.3	29.2	38.6	38.7	39.7	38.0	36.4	28.2
Ave.	6.9	4.1	4.2	2.7	3.6	9.9	14.4	17.3	20.8	27.1	23.1	16.3	12.5
Max.	32.0	29.0	21.0	17.8	23.0	28.0	36.5	43.5	44.1	43.1	41.5	39.5	44.1
Min.	3.0	1.5	-0.5	-1.0	-3.0	4.0	4.0	13.0	17.0	20.9	18.0	14.0	-3.0
1957 Ave.	28.8	23.8	15.7	10.8	15.2	21.4							
Ave.	11.9	6.7	1.6	3.2	2.1	7.3							
Max.	35.0	28.0	27.4	17.9	21.2	24.8							
Min.	5.0	3.0	-3.9	-1.9	-1.9	1.9							
1958 Ave.					16.7	25.0	33.9	30.8					
Ave.					2.8	10.4	15.6	21.3					
Max.					20.0	34.3	45.0	34.9					
Min.					-3.0	-8.0	9.9	9.9					
Period Ave.	28.0	23.2	16.2	12.5	17.4	22.8	30.7	34.2	39.0	40.8	39.0	36.0	28.4
Ave.	9.4	5.7	2.0	2.5	2.9	9.2	13.3	18.5	20.1	24.6	22.0	16.4	12.0
Max.	35.0	29.0	27.4	20.0	26.0	34.3	45.0	43.5	44.1	46.0	45.5	40.2	46.0
Min.	3.0	0	-5.1	-2.0	-3.0	-8.0	2.0	9.8	11.0	17.0	12.0	9.0	-8.0

e - Estimated.

PRECIPITATION IN MILLIMETERS AT NAD-I-ALI, AFGHANISTAN

1955

Jan.	2	1.0	Jan.	20	1.3	Mar.	10	1.0
	5	4.1		28	1.3		13	2.3
	6	12.5		29	10.2		14	9.4

1956

Dec.	7	3.6	Jan.	16	2.0	Mar.	15	8.1	Apr.	6	2.8
	10	7.6	Feb.	2	2.0		19	6.4		7	2.5
	13	25.4		26	3.0		21	3.6	July	16	6.4
	14	5.1		28	3.3		23	15.5		24	12.7
Jan.	1	7.1	Mar.	4	3.8		30	10.2		25	8.9
	2	6.9		5	7.6		31	21.9		29	2.5
	12	1.5		14	2.5	Apr.	5	2.5			

1957

Oct.	28	7.1	Jan.	3	3.5	Jan.	9	3.8	Jan.	20	10.0
Dec.	31	11.5		4	4.0		13	22.9		25	2.8
Jan.	1	3.0		7	17.8		18	7.0	Feb.	1	4.2
	2	3.5		8	2.5		19	7.0			

Monthly and annual precipitation, in millimeters, at Nad-i-Ali, Afghanistan

Year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Annual
1955	0	0	0	25.5	0	12.7	0	0	0	0	0	0	38.2
1956	0	0	41.7	17.5	8.3	79.6	7.8	0	0	30.5	0	0	185.4
1957	7.1	0	11.5	87.8	4.2	0	e4.0	e1.0	e0	e0	e0	e0	115.6
Ave.	2.4	0	17.7	43.6	4.2	30.8	3.9	0.3	0	10.2	0	0	113.1

e - Estimated.

Monthly and annual evaporation in millimeters at Nad-i-Ali, Afghanistan

Year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Annual
1954									429	388	355	300	
1955	144	70	52	67	77	182	266	e300	330	394	315	210	2407
1956	140	89	89	79	46	125	246	285	306	305	290	190	2190
1957	117	65	117	88	95	90							
Ave.	134	75	86	78	73	132	256	292	355	362	320	233	2298

e - Estimated.

Monthly and annual average wind velocity and maximum velocity, in kilometers, per day at Nad-i-Ali, Afghanistan

Year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Annual
1954									239	215	334	375	
									948	910	997	926	
1955	133	164	166	160	212	247	279	e258	237	197	152	102	192
	401	894	956	450	780	492	956	-	807	823	560	260	956
1956	175	110	151	161	206	228	e208	187	199	152	129	e110	168
	960	700	644	450	480	937	-	363	430	341	250	-	960
1957	92	119	113	210	171	191							
	247	298	301	481	358	326							
Ave.	133	131	143	177	196	222	244	222	225	188	205	196	180
Max.	960	894	956	481	780	937	956	363	948	910	997	926	997

e - Estimated.

Monthly and annual average relative humidity - high and low, in percent, at Nad-i-Ali, Afghanistan

Year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Annual
1954											38.2	-	
											19.1	-	
1955	-	-	-	-	-	-	-	58.6	46.7	45.0	54.2	62.1	
								20.3	14.8	13.3	16.0	16.0	
1956	84.1	89.5	91.5	92.0	83.0	90.0	81.8	60.4	44.3	68.2	46.1	57.3	74.0
	25.2	30.8	39.7	37.2	21.6	38.2	18.2	10.5	16.2	23.4	13.0	17.8	24.3
1957	-	77.4	79.1	90.6	88.4	87.2							
		17.3	27.2	50.2	24.1	21.6							
Ave.	84.1	83.4	85.3	91.3	85.7	88.6	81.8	59.5	45.5	56.6	46.2	59.7	
Ave.	25.2	24.0	33.4	43.7	22.8	29.9	18.2	15.4	15.5	18.4	16.0	16.9	

HELMAND RIVER BASIN - AFGHANISTAN

Snow Surveys 1954-1960

General.--The snow courses are located along the Kandahar-Kabul highway and utilize the 25-foot steel pole, 4-wire telephone line as reference. The poles are about 150 feet apart and 10 poles give a good representative course for the Valley.

Course No. 1.--Approximately 5 miles north of Mukur; elevation 6,800 feet; use 10 poles of line which parallels the highway and is about 500 feet to the west.

Course No. 2.--Approximately 2 miles north of Mashaki; elevation 7,000 feet; use 10 poles of telephone line to west of road. Course extends north from initial pole which is marked No. 1 with red paint and is 4 poles south of guyed pole at change in direction of line.

Course No. 3.--Approximately 4 miles south of Ghazni; elevation 7,450 feet; use 10 poles of telephone line to south of reference pole. Reference pole is at change in direction of line and is marked with a band of red paint 5 feet above ground.

Course No. 4.--Approximately 17 miles north of Ghazni; elevation 8,300 feet; use 10 poles of telephone line to south of reference pole. Reference pole with 3 guys is marked No. 2230 and is at change in direction of line just north of the village of Shashgao. Course is on irrigated land and about in center of Shinitz River Valley.

Courses Nos. 1, 2 and 3 are at approximately the same location as those used prior to 1960; No. 4 was established 2/16/60.

Equipment.--A Mt. Rose snow sampler is used.
Cross section of cutter 1.5 inches
Design: One ounce of snow equals 1 inch of water.
Scale is graduated in ounces.
Snow courses were run with 2 samples at each of 10 telephone poles 150 feet apart and total composite sample at 20 points were weighed and averaged for both snow depth and inches of water.

HELMAND RIVER BASIN - AFGHANISTAN

Snow Surveys - 1954 to 1960

SUMMARY OF SURVEYS IN INCHES OF WATER

Year	Course No.								Ave.
	1		2		3		4		
1954	Jan. 28	3.1							
	Feb. 16	5.8	Feb. 16	3.8					
	Feb. 22	6.7			Feb. 20	5.9			5.47
1955	Feb. 2	1.3							
	Feb. 8	1.5							1.50
1956	Feb. 19	a1.0	Feb. 19	0	Feb. 13	2.8			1.27
1957	Feb. 17	3.7	Feb. 17	1.4	Feb. 16	2.3			2.47
1958	Jan. 20	0	Jan. 20	0	Jan. 20	0			
	Jan. 30	0	Jan. 30	0	Jan. 30	1.5			0.50
1959	Feb. 3	2.4	Feb. 5	0.7	Feb. 2	3.3			
	Feb. 17	1.7	Feb. 17	1.1	Feb. 17	3.3			2.03
1960	Feb. 16	0	Feb. 16	0	Feb. 16	a0.1	Feb. 16	a0.2	0.07

a - Estimated.