中華民國十五年

楊子江技術委員會第五期年終報告

公布第五號

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公牘摭要

弁言

本會自民國十一年組織成立以後就中事務之繁而進行又極感困難者約以十五年爲最揚子江上游一帶如湖南之湘江鄂贛兩省長江之流域無不水患紛乘偏災迭告加以各該處漫溢之水尙未稍見退落而戰事又相繼發生天災人禍迄無已時以故本會測量不無因之重受影響惟是年上半年所辦測量工作成績尙屬優良據測量總工程師報告關於揚子江中游各支河流量測量及宜昌至吳淞水準測量兩項均經督促進行先後分別辦竣宜昌水準測量計長有一千七百七十公里其沿江水準標亦設有一千餘處嗣後揚子江兩岸關於防灾水利等問題如擬攷察水準事項自不難即以此爲根據其餘漢口至沙市間大三角測量現亦辦理完竣此外如攷查泥沙成分及水尺記錄暨雨量統計仍舊繼續辦理對於防災事宜近亦備極注重惟年來軍事興本會應測區域多屬戰事範圍所有各測隊人員自未能再令工作致蹈危機尤未便坐耗光陰虛糜俸給不得已復又稍事變通酌予撤回暫以辦理計算繪圖等事用維會務現在應辦防災流量地形等測量成績均經切實籌擬妥爲規畫竣事其有關鄱陽湖方面之地形測量並已成圖三幅精贍詳明足資參證至禹觀山金水閘原定計畫並經審愼考核略事變更俾臻完善所有年來鄂贛皖三省沿江附近地方漫溢成災損失奚鉅本會現並詳細調查藉圖整理總之本會所辦測量以本年之全年工作而論就中雖迭經軍事而測務進行迄未中輟試一究其源委固由各測員艱苦不辭勇於任事所致然要非沿江軍民各長官體念宣防亦斷難收此實效而對於本會計畫進行尤以財部宋子文部長贊助爲最力此誠爲本會所極爲佩懽而感頌不置者也惟此項治江事業關係灌溉防災航行諸大端均極重要將來如更能隨

時予以相當之便利則本會原定測量計畫或可次第實行免遭停頓而沿江民命田廬以及工商企業等亦可利賴攸資不致更蒙影響是又爲本會所厚望焉

呈揚子江水道討論委員會爲本會地形測量隊擬請轉函湖北省長令飭該管地方官發給布告以免誤會仰祈鑒核文

呈爲本會地形測量隊擬請轉函湖北省長令飭該管地方官發給布告以免誤會仰祈鑒核事竊據本會地形測量隊隊長萬樹芳呈稱上年十二月六日據測員王承熙函稱該分隊測至湖北廣濟縣屬廖宗泰地方該地鄉民發生誤會聚有百餘人之多圍繞阻鬧勢甚洶洶謂測量不利於地方經函本地紳耆詳爲開導始得通過未釀事端擬請函知測量經過各縣出示布告以免誤會致碍進行等語現當時局不靖測量經過之地難免發生誤會此項布告尤爲切要之需擬請函知湖北省公署或湖北江漢道尹公署發給油印布告三十張郵寄職隊備用或飭知駐漢測量處總交際員楊士雍就近逕赴江漢道尹公署催促發給寄交職隊之處請核示等情前來查長江兩岸多屬荒僻之區本會測隊經過地方人民最易發生誤會此次該隊長所請轉函發給布告一節自係爲預防障碍便利測務起見該隊所需油印布告三十張擬請准予轉行湖北省公署令飭江漢道尹迅予照辦並就近發交本會駐漢測量處總交際員楊士雍查收轉寄以便張貼是否有當理合具文呈請

鑒核示遵謹呈

揚子江水道討論委員會會長

中華民國十五年一月二十一日

函湖北省長本會地形測量隊經過地方擬請轉飭江漢道尹油印布告三十張就近送交楊總交際員查收轉寄查照辦理見復文

逕啟者據本會技術委員會呈稱竊據本會地形測量隊隊長萬樹芳呈稱上年十二月六日據測員王承熙函稱該分隊測至湖北廣濟縣屬廖宗泰地方該地鄉民發生誤會聚有百餘人之多圍繞阻鬧勢甚洶洶謂測量不利於地方經函本地紳耆詳爲開導始得通過未釀事端擬請函知測量經過各縣出示布告以免誤會致碍進行等語現當時局不靖測量經過之地難免發生誤會此項布告尤爲切要之需擬請函知湖北省公署或湖北江漢道尹公署發給油印布告三十張郵寄職隊備用或飭知駐漢測量處總交際員楊士廉就近逕赴江漢道尹公署催促發給寄交職隊之處請核示等情前來查長江兩岸多屬荒僻之區本會測隊經過地方人民最易發生誤會此次該隊長所請轉函發給布告一節自係爲預防障碍便利測務起見該隊所需油印布告三十張擬請准予轉行湖北省公署令飭江漢道尹迅予照辦並就近發交本會駐漢測量處總交際員楊士廉查收轉寄以便張貼呈請示遵等情前來查本會舉辦揚子江測量關係沿江各縣灌溉防災均極重要將來規畫設施洵於地方人民多所裨益上年該地形測量隊出發時曾由會發給護照並函請轉飭接洽保護在案茲原呈所稱各節復核尚屬實情應請轉飭江漢道尹趕速妥擬布告油印三十張就近送交本會技術委員會駐漢測量處總交際員楊士廉查收轉寄以重測務至紉公誼除指令外相應函請貴公署查照辦理見復爲荷此致

湖北省長公署

揚子江技術委員會第五次報告書　公牘摘要

中華民國十五年二月十一日

揚子江水道討論委員會指令據呈地形測量隊請發給布告以免誤會等情已函請湖北省長轉飭江漢道尹遵辦仰即知照文

揚子江水道討論委員會指令第二八號

令技術委員會委員長陳時利

呈一件呈爲本會地形測量隊擬請轉函湖北省長令飭該管地方官發給布告以免誤會由

呈悉已據情函請湖北省長轉飭江漢道尹遵辦並就近送交總交際員楊士廉查收轉寄仰即知照此令

中華民國十五年二月十一日

江西總司令鄧如琢電復承派向科長等來贛履勘已飭屬接洽保護文

內務部揚子江水道討論委員會鑒馬電敬悉贛省災情重靚承派向科長周技正史總工程師同來履勘至深紉感除飭屬接洽保護外特電奉復江西總司令鄧如琢梗叩

中華民國十五年七月二十七日

內務部函委派科長向迪琮等查勘鄂贛皖三省災情會稿照鈔一份函送查照備案文

內務部公函

逕啟者查本年入夏以來霪雨連緜江流暴漲迭據報載鄂贛皖等省災情奇重至堪憫念經商准會同委派科長向迪琮技正周象賢總工程師吏篤培等前往查勘並分電鄂贛皖三省轉飭後治保護在案相應將會稿照鈔一分函送

貴會查照備案爲荷此致

揚子江水道討論委員會

附鈔件

中華民國十五年八月十日

揚子江水道討論委員會委任令委派總工程師史篤培等前往湖南省公署接洽測量洞庭湖一案文

揚子江水道討論委員會委任令 第一號

令駐漢測量隊隊長楊士廉

茲派總工程師史篤培駐漢測量隊隊長楊士廉前往湖南省公署接洽測量洞庭湖一案仰仍將接洽情形具報候核此令

中華民國十五年一月十六日

揚子江水道討論委員會電湖南省長本會總工程師史篤培等即日赴湘籌商測量事宜希轉飭接洽文

長沙趙省長鑒本會總工程師史篤培駐漢測量隊長楊士龐即日赴湘籌商測量事宜希轉飭接洽爲盼揚子江水道討論委員會　印

中華民國十五年一月十二日

總論

本期報告書係綜合本年駐滬測量處所屬流量地形水準三角測量隊防災踏勘隊及繪圖室等於民國十五年所搜集之各項資料而勒爲是編者也上期測量成績間因舉辦期晚所獲較少不及編入上年報告書者茲於本期報告中併入編纂冀便參酌

本年七月湖江及揚子中部水患突興未幾而長江各省軍事復起本處測務因是蹙生阻滯當經審度時勢凡可興辦測量地方仍責成各隊赓續辦理其因事實上之困難不能再行籌辦者則酌調隊員興辦他種特殊事業綜是而論本年本處測量成績其進步之迅捷收效之宏富當以上半年爲最計此期所獲資料其最足稱頌者當以揚子江中游全部流量及吳淞宜昌間之精確水準得以悉觀厥成至下半年期內則因水災及軍事之影響而各隊進行時輟時興或有悉行停辦者

上年報告書中所載揚子江中游流量成績本期增益復多書中所列圖解本期外兼列上年成績期便參校至本期新獲流量資料爲湖江及洞庭湖區暨揚子中游之各支流惟區域遼闊本年所獲成績尙嫌不敷冀於來歲續行搜集藉竟全功

防災測量之舉辦本年更事增益其上年經辦之金水規復計畫及各縣之踏勘事務本年並經續辦而於長江重要之隄岸亦復加以測勘

繪圖室製辦各項圖表及審核各測隊資料勞勤懋彰成績尤著計本年製成各圖大者一百四十九幅小者七十二幅茲併附入本期報告書中以供瀏覽此外鄱陽湖區地形圖亦經付印閤中於流量地形及其他重

要資料均經一一備載洵爲航行家及地形學家參考之秘帙也

海關於長江流域之水位考察夙極精審所獲成績復承借著叨惠良深內地教會協助本處搜集雨量報告

接時致送尤所紉荷

第一章　組織

本測量處職員截至本年年終如下表

駐滬測量處職員表

姓名	派充日期	職務
史篤培	十一年七月一日	測量總工程師
總務科		
楊景時	十一年七月十三日	書記長
顧紫荃	十一年七月十三日	事務員
經寶鴻	十一年七月二十五日	事務員
周正賢	十一年七月十九日	事務員
繪圖室		
李肇安	十二年三月二日	測量局總工程師
顧鼎	十一年八月一日	二等測量副工程師

程光普	十二年三月二十九日	二等測量副工程師	
朱士俊	十一年八月七日	二等測量副工程師	
陳湛恩	十一年八月十九日	二等測量副工程師	
沈寶瑋	十一年八月四日	二等測量副工程師	
章錫綏	十一年七月二十九日	二等測量副工程師	
烏聿定	十二年二月二十七日	二等測量副工程師	
潘家範	十二年五月十七日	一等練習員	
章天鐸	十一年十二月一日	一等練習員	
陸超	十一年十二月十一日	一等練習員	
徐善徵	十二年二月三日	一等練習員	
余誠模	十三年八月一日	二等練習員	
陳鑑	十三年八月一日	二等練習員	
沈仲康	十一年八月十六日	二等給圖員	
丁偉仁	十四年二月一日	二等給圖員	
楊士廉	十一年十一月二十一日	隊長兼事務員長	

滬口流量測量隊

林友龍	十一年七月十三日	二等測量工程師	
曾鴻	十一年十二月二十六日	一等測量副工程師	
趙履祺	十一年七月二十二日	一等測量副工程師	
劉鴻三	十一年十二月一日	事務員	三角測量隊
李誼若	十一年八月五日	隊長	
李鴻猷	十二年一月三十一日	二等測量副工程師	
沈景初	十一年八月十二日	署隊長一等測量副工程師	精確水準測量隊
張崇基	十二年九月十八日	一等練習員	
莊均	十二年二月二十七日	一等練習員	地形測量隊
萬樹芳	十一年八月一日	隊長	
汪彥方	十二年十一月一日	一等測量工程師	
王承熙	十二年九月一日	一等測量副工程師	
王國蕃	十一年八月一日	二等測量副工程師	

皮方中	十二年十一月八日	一等練習員		
黃道容	十三年十二月二十八日	一等練習員		
防吳踏勘隊				
吳甫凱	十一年十一月八日	署隊長一等測量工程師		
王瑞麟	十一年十二月十一日	二等測量員工程師		
顧家模	十一年十二月十五日	一等練習員		
劉復俊	十三年三月二十四日	一等練習員		
楊蔚丞	十一年八月五日	事務員		
專務員				
安根森	十二年四月二十四日	駛船機師		

第二章　流量測量成績

第一節　水尺

甲　總論

上年六七月間揚子中游地方本處所設各水尺截至本年五月仍虧續接辦此一年期內所有水岸高低數亦援舊例按時記載足敷本處計畫之用惟峯灣上游之東嶺及下游沙湖兩處之測站因有特殊關係仍復繼行記錄

乙　新水尺之地點

本年本處於揚子中游之各支流地方設立新水尺多處惟無一定時期僅就當地情形從事設置耳計在金水者爲金口及禹觀山在烏口溪者爲烏口及黃蓋嘴在陸水者爲陸溪口及龍坑在華容者爲調絃

本處因辦理規復金水特別計畫起見所有一應測量事務自須特加注重茲於金口及禹觀山外復就金水及公子港滙流處之法泗洲公子港口之龍鳳山及斧頭湖之廟嘴等地方設置新水尺是項記載於金水水性關係至要故其裨助於規復計畫者亦既重且鉅也

在湘江及其支流處本處新設水尺地點爲蘆林潭瀼河口丁字灣及滋湖口等處

本處設置水尺地點外尙有海關水尺數處其搜集之資料亦經本處採用第一第二圖表明本會及海關水尺地點其流量測站地點亦於圖內註明

新設水尺地點表

水尺地點	江別
烏口	烏口溪
黃蓋嘴	烏口溪
陸溪口	陸水
龍坑	陸水
調絃	華容河
金口	河口
禹觀山	河口
龍鳳山	河口
廟嘴	湖
斧頭湖	湖

金口	金水	河口		
禹觀山	金水	金口上七公尺		
法泗洲	金水	公子港會點		
龍鳳山	公子港	魯湖		
廟嘴	笋頭湖	湖之北岸		
赤磯山	揚子江	金口上		
磊石山	湘江	泪羅河會點		
蘆林潭	湘江	支流會點		
湘陰	湘江	湘陰		
滬河口	湘江	支流會點		
丁字灣	湘江	馬鞍山		
長沙	湘江	長沙		
蕊湖口	沅江	會點		
常德	沅江	常德		
沅江	沅江	會點		
益陽	資江	益陽		

安*	鄭一	安鄭河	安鄭
津*	市	太平河	澄河會點

附註

表中有*符號者爲海關水尺

丙　紀錄

揚子中游地方上年本處所設水尺截至本年五月即行裁撤至各水尺逐日應行記載之同時水面線辦理已歷一年足敷堤畫之用其上年及本年年初之記載業經分別列入圖內一如上期報告（參閱第二圖）關於水尺之紀錄爲數至鉅芬帙尤巨茲就原紀錄中之同時水面線與精確水準及普通水準線有關係處分繪成圖餘均從略（參閱第四圖）

漢口城陵磯沙市宜昌等處之水面線海關亦有同一之紀錄茲特將本處及海關所得之資料一併列入圖內以資比較

丁　水尺之高度

吳淞至宜昌間之精確水準線業經本會於本年春間測量完竣所有中下游之水尺高度就本處及海關所測得者均可比較劃定

初本會擬就城陵磯地方沿湘江兩岸辦理精確水準測量嗣因水災及軍事影響以致原定計畫忽生阻滯

僅城陵磯至磊石山間之精確水準方獲報竣遂致停辦

本年本精確水準所得水尺之高度茲併彙列如下表本表可附入上期報告書一併參閱爲比較便利起見

本表復列漢口及城陵磯兩處之高度

水尺高度表

水尺地點	高度（以公尺計）
漢口 揚子江	一一·九四〇
金口 金水	一四·三〇五
禹山 金水	一五·一九〇
法泗洲 金水	二〇·五五六
龍口 魯湖	二〇·二三四
廟嘴 洋頭湖	二〇·三三七
陸溪口 陸水	一五·〇二〇
城陵磯 湘江	一七·六三八
磊石山 湘江	二〇·四四四
烏口 烏口溪	一九·二八四

附註

表中有＊荷號者爲海關水尺

戊　水位升降

本處根據海關所得資料製成湘江及其他滙入洞庭湖各支流之水位升降圖多幅流經長沙處之湘江其記載爲一九零八年至一九二六年流經磊石山處之湘江其記載爲一九二五至一九二六年至沅江益陽安鄉津市常德等處因測站新設未久故圖內所表示者爲期僅有二年參閱第五至第十七圖

湘江最高最低水位之變遷就各處逐年所得之記錄均嫌爲時甚暫繪製維艱惟長沙一處歷時既久資料尙敷本處因得製成此圖參閱第十八圖

第二節　流量

甲　總論

揚子中游本會曾於上年六月就城陵磯尺八口枝江松滋等處設立流量測站截至本年五月歷時已閱一年所得資料足敷應用因即停測惟揚子及湘江支流本年春間增置測站爲數甚多茲將各測站地點及測量期間分別列表如下

流量測站表

測站	別地	點測	量期間
禹觀山　金水口　陸水溪口　陸水	金口上七公尺　河口	十五年二月至十二月　二月至十二月	

烏	口	烏口溪	河口	二月至十二月
調	絃	華容河	河口	六月至九月
藕	池	口	藕池河安鄉	河口	七月至九月
太	平	口	太平河	河口	六月至十二月
湘		陰	湘江	湘陰	二月至七月
澧	河	口	湘江	支流會點	二月至七月
常		德	沅江	常德	六月至十二月
益		陽	資江	益陽	六月至七月
臨	澧	口	湘江	河口	三月至七月

上表所列流量成績間有未能測至年終者蓋軍事影響使然本處固切盼來歲時局安謐得以賡續接辦也各測站之橫斷面處其流速線均係由水面十分一之深度測至江底

乙　測站斷面

洞庭湖及湘江下游各區新設之流量測站及新設水尺各地點均經一一繪入第一圖至第十九至第三十圖係表明揚子中游及松滋河本年五月前所測之橫斷面此圖並可與上期報告銜接第三十一至第三十五圖係揚子中游各支流斷面圖第三十六至三十八圖係湘江及各支流之斷面圖上圖並表明測勘日期暨水位及江底之高度由此比較則江流淤刷之變遷可得而知矣

城陵磯尺八口測站每月所測次數爲二次至三次其他各站則月爲三次至五次惟松滋一站月僅一次

丙　測站之斷面流率

一　直測流速曲綫

各測站之流速測法均係應用測流器測得測流方向則與水面及每深十分一間施測一次即以所得結果繪成曲綫形是謂直測流率曲線爲比較便利起見此種曲線並經繪入各測站之橫斷面圖內其流率速度及地位亦於圖中表明至最高最低水位之直測流速曲線圖則僅繪製一份惟限於篇幅最高或最低水位之直測流速曲綫往往擇一繪入本圖但其結束仍足充分表示也城陵磯尺八口及枝江各測站之直測流速曲綫均就各水尺地方繪繪一圖以資比較（參閱三十一至四十一圖）

二　流率

在直測流速曲綫及橫斷面下附重要之比例表（一）水面流速與流率之比列（二）距水面二分深處之流速與流率之比例（三）江底流速與流率之比例

下表係表明研究直測流速曲綫之結果 V_m/V_s 爲流率與水面流速比列 $V_m/V_{0.2}$ 爲流率與二分深處平均流速之比例 V_m/V_b 爲流率與江底平均流速之比例

平均流速與其他之流速比較表

測站	月分	平均曲線數	$\frac{V_m}{V_s}$	$\frac{V_m}{V_{0.2}}$	$\frac{V_m}{V_b}$
城陵磯	民國十五年一月	二	〇·九一二	〇·八九五	一·四一五

二月	二	○·八七四	○·八八八	一·三六八	
三月	三	○·八五〇	○·八六一	一·五六三	
四月	二	○·八五八	○·八七一	一·四五八	
五月	三	○·八三七	○·八五九	一·五二七	
本年平均數	一二	○·八六六	○·八七五	一·四六六	
十四年平均數	一九	○·八七五	○·八八六	一·五五一	
十四兩年平均數	三一	○·八七二	○·八八二	一·五一七	
民國十五年一月	二	○·九二九	○·九二七	一·二六三	
二月	一	○·九一二	○·九〇五	一·三八五	
三月	二	○·八四九	○·八七一	一·六三五	
四月	三	○·八九〇	○·八九五	一·四五〇	
五月	三	○·八三三	○·八五四	一·六二八	
本年平均數	一一	○·八八三	○·八九〇	一·四七三	
十四年平均數	一五	○·八六九	○·八九二	一·四〇九	
十四兩年平均數	二六	○·八七五	○·八九一	一·四三六	
民國十五年一月	三	○·八八五	○·八九〇	一·四四一	

枝江

	二月	三	○·八八〇	○·八八五	一·四三四	
	三月	三	○·九一〇	○·八九九	一·四二九	
	四月	五	○·八九〇	○·九〇〇	一·四三四	
	五月	五	○·九一八	○·九一七	一·三四三	
	本年平均數	一九	○·八九七	○·八九八	一·四一六	
	十四年平均數	二九	○·九二〇	○·九一九	一·三九八	
	十四五兩年平均數	四八	○·九一一	○·九一一	一·四〇九	
松滋（松滋河）	民國十五年一月	一	○·九六四	一·〇〇二	一·〇八四	
	二月	一	○·八三〇	○·九一四	一·二九七	
	三月	一	○·七七〇	○·八四五	一·三七六	
	四月	一	○·九五八	○·八八九	一·三五〇	
	五月	一	○·八三七	○·八七四	一·四〇〇	
	本年平均數	五	○·八七二	○·九〇五	一·三〇一	
	十四年平均數	七	○·八五六	○·八七七	一·四四二	
	十四五兩年平均數	一二	○·八六三	○·八八九	一·三八三	
禹親山	民國十五年二月	四	○·九二五	○·八九六	一·二五九	

三月	五	○・八九○	○・九二四	一・二四五	
四月	四	○・八八四	○・九二五	一・一九二	
五月	三	○・九一二	○・九○九	一・二三二	
六月	四	○・八八四	○・九○三	一・三七二	
七月	四	○・九六五	○・九六一	一・一六三	
八月	三	○・九五四	○・九三六	一・一九三	
九月	三	一・○○四	○・九四二	一・三八六	
十月	五	○・九一○	○・八七九	一・五三六	
十一月	五	○・九四九	○・八八四	一・三二四	
十二月	四	○・九九三	○・八九○	一・三○四	
本年平均數	四四	○・九三四	○・九一四	一・二九一	
陸溪口（陸水）					
民國十五年二月	一	○・九三五	○・九二一	一・三一七	
三月	三	○・八七七	○・八三○		
四月	二	○・八○○	○・八三○	一・四○九	
五月	二	一・二二五	○・九八七		
六月	四	○・六七五	○・七四二	二・六四四	

七月	五	○·六三九	○·八六八	二·二五九	
八月	四	○·四六五	○·七〇九	二·四五三	
九月	四	○·四六二	○·六八八	五·一九六	
十月	五	○·四〇三	○·八六一	三·六一八	
十一月	三	○·五四三	○·八四一	七·五二四	
十二月	四	○·七〇六	○·九七六	一·六六九	
本年平均數	三七	○·七〇三	○·八四一	三·二一一	
島口(島口溪) 民國十五年二月	一	一·〇〇一	○·九三二	一·一八七	
三月	三	一·〇一一	○·九一五		
四月	二	○·九二六	○·九一五		
五月	二	○·九二七	○·八八五	一·五一八	
六月	四	○·九六九	○·九三五	一·二七〇	
七月	五	一·〇一三	○·八七八	一·四七五	
八月	三	○·九八三	○·八八四	一·八五三	
九月	四	一·〇九三	○·八八六	一·五〇九	
十月	四	一·一一二	○·九二六	一·四九七	

	十一月	四	一·一〇〇	○·九二四	一·二一九		
	十二月	五	一·一〇六	○·九五六	一·一二一		
	本年平均數	三七	一·〇二二	○·九一二	一·四〇五		
調絃(華容河)	民國十五年六月	三	○·九三九	○·八九五	一·五一三		
	七月	四	○·九三三	○·九〇八	一·四七四		
	八月	四	○·九五五	○·九〇七	一·四一一		
	九月	一	○·九五四	○·九二三	一·四〇七		
	本年平均數	一二	○·九四五	○·九〇八	一·四五一		
藕池口(藕池河)	民國十五年六月	一	○·八八六	○·八七五	一·四八七		
	七月	三	○·九二三	○·八九二	一·三六二		
	八月	四	○·八八九	○·九〇六	一·三三三		
	九月	二	○·八七七	○·八七〇	一·四二七		
	本年平均數	一〇	○·八九四	○·八八六	一·三四〇		
藕池口(安鄉河)	民國十五年七月	三	○·八八四	○·八八六	一·四〇七		
	八月	四	○·八六八	○·八八六	一·二六五		
	九月	二	○·八八八	○·八九七			

	本年平均數	九	○·八八○	○·八九○	一·三三七	
太平口（太平河）	民國十五年六月	二	○·九四○	○·八六六	一·四三九	
	七月	四	○·八五三	○·八三五	一·六一七	
	八月	四	○·八五九	○·八四八	一·五八三	
	九月	三	○·九一○	○·八五一	一·三八四	
	十一月	三	○·九四一	○·八八一	一·四四○	
	十二月	三	○·八六○	○·八六六	一·四八四	
	本年平均數	一九	○·八九四	○·八五八	一·四九一	
油陰（湘江）	民國十五年二月	一	○·九五九	○·九二二	一·二一九	
	三月	五	○·九一八	○·九四五	一·二三八	
	四月	五	○·九二八	○·九二○	一·三二九	
	五月	五	○·八九二	○·九○七	一·三一六	
	六月	三	○·八九六	○·九二二	一·二九一	
	七月	二	○·九○四	○·九一六	一·二八○	
	本年平均數	二二	○·九一六	○·九二二	一·二七九	
濠河口（湘江）	民國十五年二月	一	○·九○○	○·八七四	一·三六一	

三月	四	○·八五五	○·八七四	一·五六九		
四月	五	○·八五九	○·八七〇	一·四一六		
五月	六	○·八五〇	○·八六九	一·五四五		
六月	四	○·八五〇	○·八六七	一·四二三		
七月	二	○·九四八	○·九一八	一·二七九		
本年平均數	二二	○·八七七	○·八七九	一·四三二		
臨潼口（浦江）						
民國十五年三月	四	○·九二三	○·九三一	一·三九五		
四月	六	○·九四六	○·九六〇	一·二二九		
五月	六	○·九一七	○·九三四	一·二七二		
六月	五	○·九四二	○·八九五	一·四五〇		
七月	一	○·九五八	○·九五三	一·二六〇		
本年平均數	二二	○·九三七	○·九三五	一·二二一		
常德（沅江）						
民國十五年六月	四	○·八六五	○·八八八	一·四六四		
七月	一	○·八八四	○·八九〇	一·三六四		
八月	四	○·八九〇	○·八八八	一·五一〇		
九月	四	○·九三〇	○·九一一	一·四二三		

	十月	四	○·八四三	○·八五五	○·八五五	一·五五七
	十一月	四	○·九一三	○·八六五	一·五〇五	
	十二月	四	一·〇四九	○·九四八	一·三八五	
	本年平均數	二五	○·九一一	○·八九二	一·四五八	
益陽（資江）	民國十五年六月	五	○·八六七	○·八八八	一·三六八	
	七月	一	○·八七四	○·八九三	一·三七八	
	本年平均數	六	○·八七一	○·八九一	一·三七三	

三　最大流速線與平均流速

下表係表明在一定時期內所測得之最大流速及計算所得之全江各站平均流速其所列日期則係各測站全年中最大及最低流量時期

最大流速及平均流速表

測站	月日	水面高度 吳淞水平線零度	水面高度 各該地水平線	測得最大流率（每秒鐘公尺數）	計算所得平均流速（每秒鐘公尺數）
城陵磯	十五年二月三日	一八·四七		一·四七〇	○·九〇五
	十四年九月十七日	二八·三一		二·五九〇	一·六六五
八口	十五年二月十八日	二〇·七四		一·四七〇	○·九一五

	十四年七月九日	二七・一六			三・四八〇	二・四六五
枝江	十五年二月四日	三八・〇四			一・〇二〇	〇・五八五
	十四年九月十一日	四七・〇三			四・二六五	三・〇八〇
松滋	十五年一月十一日	三八・三二			〇・一九〇	〇・一四五
	十四年九月八日	四六・七九			一・九二〇	一・六一五
禹觀山	十五年五月六日	一七・〇六			〇・二六〇	〇・一九〇
	十五年八月十八日	二七・八四			一・三八五	〇・九四五
陸溪口	十五年二月十日	一六・二四			〇・四一〇	〇・二九〇
	七月十日	三一・四八			〇・五〇〇	〇・三〇〇
烏口	十五年二月十一日		〇・九一		〇・二六五	〇・二六五
	七月一日		九・五三		一・〇六〇	〇・八三五
太平口	十五年十二月二十二日	三四・三二			〇・一五〇	〇・一一五
	七月二十三日	四二・一八			一・五四〇	一・一六五
湘陰	十五年四月四日		二・三八		〇・五八〇	〇・三七〇
	七月三日		一〇・八八		二・六〇〇	一・七六〇
滬河口	十五年四月五日		二・一三		〇・三五〇	〇・二三〇

		七月三日	一〇·八七	二·六六〇	一·八五〇	
臨	澄	口 十五年六月二日	六·七四	〇·一〇〇	〇·〇六〇	
		七月二日	九·八二	一·〇七〇	〇·八六五	
常	德	十五年十一月二十三日	一·〇四	〇·二七〇	〇·一八五	
		七月六日	七·七七	一·九二〇	一·五八五	

四　流速同速線

第四十二至四十六圖係表明各測站在某日所測流速之變化一圖爲低水位時期內之變化一圖爲洪水位時期內之變化顧本會實施時日雖非即爲最高或最低水位時期但其距離相去固不甚遠至流速同速線依照普通方法與同高線同樣繪成圖中虛線則係表明求得最大流速線處之深度

丁　測站水面線及流量曲線

第四十七至五十八圖係表明各測站之水面線及流量曲線暨平均面積並依據所得之詳確數目繪製流量曲線此項曲線蓋就測得之結果而採取其平均數

本處爲參閱便利起見所有揚子中游城陵磯尺八口枝江松滋河之松滋等處上年及本年所得之流量曲線結果亦經一併繪製成圖藉期全年成績便於明瞭此外揚子江支流如洞庭湖湘江等測站本年因軍事及水災影響測得之流量曲線既無定時且又被迫停滯以故所得結果爲數甚微本期報告祇能具撮要之紀錄而於流量曲線之繪製則悉付闕如然本處固仍切望時局日就安謐此間測事之得暫續舉辦來歲復

可爲詳晰之報告也

本年本處所得之流量成績可就圖及附表之程序求得任何測站及任何時期所得之結果圖中所列禹觀山道口及臨潼口等處流量成績在某時期內其流量及流率間爲負數蓋由江流盛漲水勢倒灌使然也

戊　測站水面線流量面積及流速之變遷

第五十九至六十八圖係表明本年全年內中游揚子江及洞庭湖區各測站每日所勘得之水面線面積流量及流速等至上年測得之結果本期報告併經附載計每站各有一圖以資參校

己　流量成績表

以下各表係表明本年本處就各測站測得之流量成績並將水面高度附入以資對照

城陵磯揚子江流量表

日期	流量（每秒鐘立方公尺數）	水面高度零度高於吳淞海平綫之公尺數
十五年一月八日	七、七三〇	一八・八六
一月二十日	七、七三〇	一八・八三
二月三日	六、五三〇	一八・四七
二月二十日	一〇、五〇〇	二〇・〇六
三月六日	一二、八六〇	二一・三七

三　月十二日	一六五二〇	二二・四二
三　月二十九日	一三、〇四〇	二一・五九
四　月十四日	九、一一〇	二〇・〇二
四　月二十二日	一九、六四〇	二二・四九
五　月四　日	一三、二〇〇	二一・四一
五　月十一日	二一、八〇〇	二三・六八
五　月十八日	二五、二一〇	二四・九二

尺八口揚子江流量表

日期	流量（每秒鐘立方公尺數）	水面高度零度之公尺數	高於吳淞海平綫
十五年一月四日	六〇一〇	二〇・一二	
一月二十三日	五、〇四〇	一九・九三	
二月十八日	四、八二〇	二〇・七四	
三月八日	六、五六〇	二二・六九	
三月十六日	四、八五〇	二二・六九	
四月三日	六、五二〇	二一・八一	
四月十六日	五、三七〇	二一・〇四	

四月二十四日		一〇、三〇〇		二三・八六
五月五日		八、〇二〇		二二・七三
五月十二日		一〇、九五〇		二五・〇一
五月十九日		七、八三〇		二五・三二

枝江揚子江流量表

日期	流量（每秒鐘立方公尺數）	水面高度零度之公尺數	高於吳淞海平綫
十五年一月七日	四、八八〇	三八・四七	
一月十五日	五、四一〇	三八・五九	
一月二十三日	四、八七〇	三八・二九	
二月四日	四、一九〇	三八・〇四	
二月九日	五、二八〇	三八・四四	
二月二十二日	四、四七〇	三八・二〇	
三月五日	六、六二〇	三八・八三	
三月十六日	五、六四〇	三八・七四	
三月二十一日	四、九九〇	三八・四七	
四月一日	七、二〇〇	三九・四一	

日期	流量（每秒鐘立方公尺數）	水面高度零度之公尺數	高於吳淞海平綫
十五年一月十一日	二〇〇		三八・三二
二月十八日	二一〇		三八・二三
三月九日	三六〇		三八・七一
四月三日	四六〇		三九・一七
五月十九日	一七六〇		四一・〇六
四月十三日	五五四〇		三八・六二
四月十九日	九一四〇		四〇・二四
四月二十一日	一四七八〇		四一・四九
四月二十六日	八七九〇		四〇・一一
五月三日	九七九〇		四〇・四二
五月八日	一四一二〇		四一・四六
五月十日	一六九七〇		四二・二八
五月十五日	一二〇一〇		四一・〇〇
五月二十一日	一八七二〇		四二・六四

松滋松滋河流量表

陸溪口陸水流量表

日期	流量(每秒鐘立方公尺數)	水面高度(高於吳淞海平綫若干公尺數)
十五年二月十日	一二	一六·二四
三月一日	三〇	一八·九九
三月十四日	一二八	二〇·七五
三月二十四日	四四	二〇·六六
四月五日	四四	一八·七六
四月十九日	四二	一九·二〇
五月十二日	二六二	二二·六七
五月二十一日	一七二	二三·四六
六月四日	五五	二六·三九
六月十一日	四四	二六·二一
六月十八日	五六	二七·二一
六月二十六日	八七	二八·〇四
七月二日	三七〇	二九·九九
七月十日	五四〇	三一·四八

七月十六日	二二三	〃	三〇・九四
七月二十三日	八九	〃	三〇・六三
七月三十一日	一五〇	〃	三〇・五七
八月六日	七一	〃	三〇・三六
八月十三日	一一三	〃	三〇・四〇
八月二十日	九二	〃	三〇・六二
八月二十七日	一一八	〃	二九・八七
九月三日	五六	〃	二九・二四
九月十日	一二五	〃	二八・五八
九月十六日	一一七	〃	二七・六四
九月二十六日	九〇	〃	二五・八二
十月二日	四九	〃	二五・五四
十月九日	八六	〃	二六・一六
十月十六日	五三	〃	二六・五六
十月二十二日	五五	〃	二六・四五
十月三十日	九九	〃	二五・七〇

十一月五日	三四	二四·八三
十一月十二日	二九	二三·六九
十一月十九日	二九	二二·一六
十二月三日	三二	二〇·三五
十二月十日	四五	二〇·五一
十二月十七日	二六	二〇·一四
十二月二十四日	三六	一九·八六

附注 *係表明流量負數

禹觀山金水流量表

日期	流量(每秒鐘立方公尺數)	水面高度零度高於吳淞海平綫之公尺數
十五年二月三日	六六	一六·三五
二月十九日	五四	一六·一六
二月二十四日	四八	一六·一六
二月二十七日	四五	一六·二六
三月六日	四三	一六·五九
三月十一日	五七	一七·五五
三月十六日	七三	一七·五四

三	月二十三日		五八	一七・三二
三	月三十一日		四六	一六・九七
四	月　九　日		三二	一五・九三
四	月十九日		二七	一五・九八
四	月二十四日		三八	一八・〇一
四	月二十九日		三八	一七・七三
五	月　六　日		二三	一七・〇六
五	月十二日		五六	一九・二三
五	月十九日		〇	二〇・一四
五	月三十一日	*	一二一	二一・七九
六	月　七　日	*	一五八	二二・四三
六	月十五日	*	一九四	二二・九三
六	月二十四日	*	二六六	二三・七六
六	月二十九日	*	三八五	二四・五五
七	月　五　日	*	一〇一〇	二五・九〇
七	月十二日	**	一二三〇	二七・四四

七月二十日	**	一、八五〇	二七・三四
七月三十一日	**	一、八三〇	二七・六一
八月五日	**	一、八七〇	二七・六〇
八月十二日	**	一、九〇〇	二七・六九
八月十八日	**	一、九五〇	二七・八四
九月十二日		六六〇	二五・九五
九月十七日		六〇〇	二五・一六
九月二十四日		五二〇	二三・九七
十月一日		三六七	二三・一五
十月七日		三一三	二三・一八
十月十四日		一八七	二三・四八
十月二十一日		一四三	二三・一五
十月二十八日		一八八	二三・〇八
十一月四日		二三三	二二・二三
十一月十一日		二二八	二一・三八
十一月十五日		二五二	二〇・五四

十一月二十二日	二三六	一九・五五
十一月二十九日	二一三	一八・八二
十二月　六　日	一八八	一八・五四
十二月十三日	一六八	一八・三九
十二月二十日	一五一	一八・〇三
十二月二十七日	一四一	一七・九三

附註　*表明流量頁數即五月二十五至七月十一日禹觀山江流倒注測得之結果

**表明江水漫溢隄岸時之流量

益陽資江流量表

日期	流量（每秒鐘立方公尺數）	水面高度高於吳淞海平綫之公尺數
六月十一日	三,七九〇	六・一三
六月十五日	一,七七〇	四・八二
六月二十二日	一,〇四〇	四・一八
六月二十四日	二,六一〇	五・六一
六月二十九日	三,六五〇	七・七一
七月七日	二,三一〇	七・一六

調絃華容河流量表

日期	流量（每秒鐘立方公尺數）	水面高度零度高於吳淞海平綫之公尺數
十五年六月四日	五五〇	九、七五
六月十一日	五〇〇	九、二一
六月二十四日	六三〇	一〇、三九
七月一日	八六五	一一、三九
七月八日	一、〇〇〇	一三、〇三
七月十六日	一、一一〇	一二、五二
七月二十三日	一、二一〇	一二、四二
八月一日	八五五	一一、四三
八月十日	一、一三五	一二、三二
八月十七日	一、二八五	一二、六〇
八月二十三日	五九五	一〇、四九
九月二日	六九〇	一〇、五三

島口島口溪流量表

日期	流量（每秒鐘立方公尺數）	水面高度零度高於吳淞海平綫之公尺數

十五年二月十一日	九			一二·六五
三月四日	二一			一二·五〇
三月十四日	三三			一三·一六
三月二十四日	二九			一二·九一
四月五日	一一			一二·〇八
四月十九日	一二			一一·八一
五月十一日	五七			一四·四七
五月二十日	五六			一五·四二
六月三日	二〇三	*		一八·一九
六月十日	一二八	*		一八·〇五
六月十八日	二一〇	*		一九·一六
六月二十四日	一六七	*		一九·八〇
七月一日	三九〇	*		二一·二七
七月十日	二五〇			二三·四五
七月十七日	一九五			二二·七四
七月二十四日	八九			二二·五二

七月二十八日		一一七		二二・六一
八月六日		九一		二二・一九
八月十二日		七五		二二・二四
八月二十六日		一九二		二一・八五
九月三日		一三六		二一・〇八
九月十日		一二九		二〇・四〇
九月十七日		一八八		一九・三四
九月二十四日		二一七		一七・九〇
十月一日		一四一		一七・三八
十月八日	*	一五七		一七・九六
十月十六日	*	五三		一八・四二
十月二十三日		一三七		一八・二二
十一月一日		一六二		一七・二八
十一月八日		一八〇		一六・二六
十一月十五日		一三九		一四・九七
十一月二十二日		六七		一四・〇三

十二月　一日	一一〇		一三・二七
十二月　八日	七八		一三・二二
十二月十五日	五九		一二・九八
十二月二十二日	四四		一二・七四
十二月二十五日	三九		一二・六四

＊表明流量資數自六月三日至七月一日及十月七日至十八日所測得之島口倒注成績

藕池口藕池河流量表

日期	流量（每秒鐘立方公尺數）	水面高度零度之公尺數	高於吳淞海平綫
十五年六月五日	三、八六〇		三五・一九
七月十一日	七、八七〇		三八・〇七
七月十八日	七、八四〇		三七・七七
七月二十三日	八、五四〇		三八・一三
八月五日	八、二三〇		三七・四六
八月十一日	九、六一〇		三七・九二
八月十八日	九、七五〇		三七・九五
八月二十四日	四、四五〇		三五・四〇

九月五日		三、五三〇	三四・九〇
九月十五日		二、五七〇	三四・〇四

藕池口安鄉河流量表

日期	流量（每秒鐘立方公尺數）	水面高度零度高於吳淞海平綫之公尺數
十五年七月十日	五、九三〇	三八・〇七
七月十七日	五、一八〇	三七・六三
七月二十四日	六、三三〇	三八・二一
八月五日	五、〇五〇	三七・四九
八月十二日	五、八一〇	三七・九八
八月十九日	四、九三〇	三七・四一
八月二十四日	二、五七〇	三五・三六
十二月五日	一、七三〇	三四・八七
十二月十五日	一、四〇〇	三四・〇六

太平口太平河流量表

日期	流量（每秒鐘立方公尺數）	水面高度零度高於吳淞海平綫之公尺數
十五年六月八日	七七〇	三八・一八

六月十二日	九五〇		三九・五三
七月二日	一、六九〇	四〇・五九	
七月九日	一、八四〇	四一・二六	
七月十六日	一、七四〇	四一・三七	
七月二十三日	二三九〇	四二・一八	
八月二日	一、七一〇	四一・一一	
八月九日	二、二五〇	四二・三六	
八月十七日	二、二一〇	四二・四八	
八月二十四日	一、〇五〇	三九・三三	
九月二日	一、三二〇	四〇・二〇	
九月十日	七七〇	三八・四〇	
九月十七日	六〇〇	三七・八二	
十一月九日	三八〇	三六・九三	
十一月十七日	二〇〇	三五・八八	
十一月二十四日	一五〇	三五・六四	
十二月二日	二〇〇	三五・七八	

十二月　九日		一四五	三五・五六
十二月二十二日		三〇	二四・三二

濠河口湘江流量表

日期	流量（每秒鐘立方公尺數）	水面高度零度高於吳淞海平綫之公尺數	
十五年二月二十七日	一、四三〇	四・八八	
三月十二日	一、八八〇	五・四六	
三月十六日	一、〇二〇	四・三七	
三月二十二日	三、二二〇	六・二〇	
三月二十七日	一、三〇〇	四・六〇	
四月一日	六〇〇	三・〇二	
四月五日	三五〇	二・一三	
四月十五日	一、〇四〇	三・四五	
四月十八日	二、〇九〇	五・〇六	
四月二十六日	六六〇	三・六一	
五月五日	八五〇	三・五八	
五月八日	一、〇四〇	四・一九	

日期	流量（每秒鐘立方公尺數）	水面高度零度之公尺數	高於吳淞海平綫
五月十二日	一七三〇		五·三一
五月十四日	二一一〇		五·八四
五月二十一日	一二六〇		四·八〇
五月二十六日	三四五〇		六·一五
六月三日	二一九〇		六·六〇
六月九日	一八八〇		六·一七
六月十五日	三一三〇		七·六八
六月二十六日	四三七〇		八·六六
七月三日	九八八〇		一〇·八七
七月十一日	一二四〇		一〇·五四

湘陰湘江流量表

日期	流量（每秒鐘立方公尺數）	水面高度零度之公尺數	高於吳淞海平綫
十五年二月二十六日	二六六〇	四·八五	
三月三日	二八三〇	五·一二	
三月十日	三六〇〇	五·八八	
三月十六日	一七五〇	四·四二	

三　月二十二日	三、九七〇	六・一九
三　月二十九日	一、六〇〇	三・九九
四　月　一　日	一、一七〇	三・〇二
四　月　四　日	八九〇	二・三八
四　月十五日	一、四二〇	三・一四
四　月十八日	二、七六〇	四・九一
四　月二十九日	一、一〇〇	三・二九
五　月　七　日	一、九五〇	四・一八
五　月十二日	二、六〇〇	五・四三
五　月十九日	二、三七〇	五・一八
五　月二十四日	一、五七〇	四・六〇
五　月二十六日	三、九二〇	五・九一
六　月　三　日	三、一九〇	六・七一
六　月十五日	四、四一〇	七・七一
六　月二十六日	五、七四〇	八・六三
七　月　三　日	一〇、五五〇	一〇・八八

七月九日		三二九〇		一一·一〇

臨濱口枝江流量表

日期	流量（每秒鐘立方公尺數）	水面高度	高於吳淞海平綫零度之公尺數	
十五年三月九日	三一〇	五·二四		
三月十四日	四四〇	四·三〇		
三月二十五日	二三〇	四·七二		
三月二十九日	四四〇	三·三八		
四月二日	六七〇	二·三五		
四月七日	四七〇	一·三一		
四月十四日	四七〇	一·六五		
四月十六日	三七〇	三·三二		
四月十八日	二一〇	四·二一		
四月二十五日	五二〇	三·五一		
五月一日	四七〇	二·三八		
五月七日	五一〇	三·六九		
五月十二日	五六〇	四·七九		

五月十九日		五四〇	四・五四
五月二十六日		九五〇	五・三三
五月二十七日		三一〇	六・六五
六月二日	*	五五	六・七四
六月八日		七〇〇	五・四三
六月十一日	*	九〇	六・七七
六月十八日		六五	六・六八
六月二十四日	*	五八五	七・八九
七月二日	*	一、一〇〇	九・八二

附註　*表明負數流量

庚　流量之量數

綜上列各表及上期報告所列流量表而觀則可知最高最低流量之確數茲彙製成表如左至流量數目均得諸實測結果其他遇有特殊情形者並經分別註明以便參閱

測站	江別	測量期間及其次數	流量（每秒鐘立方公尺數）		
		期間次數	最高數目	期	最低數目	期
城陵磯	揚子江	十四年六月起 十五年五月止 三一	三七、九六〇	十四年九月十七日	六、五三〇	十五年二月三日
尺八口	揚子江	十四年七月起 十五年五月止 二六	二〇、三二〇	十四年八月十九日	四、八二〇	十五年二月十八日

枝江	揚子江	十四年六月起 十五年五月止	四八	四九、三七〇	十四年九月十一日	四、一九〇	十五年二月四日		
松滋	松滋河	十四年六月起 十五年五月止	一二	七、六五〇	十四年九月八日	二〇〇	十五年一月十一日		
禹觀山	金水	十五年二月起 十五年二月止	四五	一、九五〇	十五年八月十八日				
陸溪口	陸水	十五年二月起 十五年二月止	三七	五四〇	十五年七月十日	一二	十五年二月十日		
烏口	烏口溪	十五年二月起 十五年二月止	三七	三九〇	十五年七月一日	九	十五年二月十一日		
太平口	太平河	十五年六月起 十五年六月止	一九	二、三九〇	十五年七月二十三日	三〇	十五年十二月二十二日		
湘陰	湘江	十五年七月起 十五年七月止	二一	一〇五〇	十五年七月三日	八九〇	十五年四月四日		
漆河口	湘江	十五年七月起 十五年七月止	二二	九八八〇	十五年七月三日	三五〇	十五年四月五日		
臨資口	湘江	十五年七月起 十五年七月止	二二	一、一〇〇	十五年七月二日	五五	十五年六月二日		
常德	沅江	十五年六月起 十五年六月止	二五	一三、二一〇	十五年七月六日	七六〇	十五年十一月二十三日		
益陽	資江	十五年六月起 十五年七月止	六						
藉池口	藉池河	十五年六月起 十五年九月止	一〇	九、七五〇	十五年八月十八日				
藉池口	安鄉河	十五年七月起 十五年九月止	九	六、三三〇	十五年七月二十六日				

附註。係表明流量之負數而得諸江流倒注時者其在最低流量時則難確定

一係表明最高最低流量均係負數

。因各測站與辦時期爲時甚暫最低洪水期內之流量尙付闕如

上表所列前四站之流量成績均係全年記載餘則未臻完備然於最高最低期內之流量其測得之結果亦夠具一斑矣

五十九至六十一圖內所列之流量曲綫就其綫下之各縱綫之和而平均之即可得全年流量之平均數並可就曲綫下之面積而以全年橫綫數除之亦可得同樣之全年流量平均數茲就全年流量平均數與每日所得之流量總數彙列成表其時期係自上年起至本年止以十二個月爲度

測站	全年流量平均數（每秒鐘立方公尺數）	每日流量總數（以百萬立方公尺計）
城陵磯	二〇、六〇〇	一、七八〇
尺八口	一〇、九〇〇	九四〇
枝江	一六、六〇〇	一、四三〇

枝江至尺八口之一段江流其流量因各支流注入洞庭水量過巨故江之自身其容量爲之銳減惟江至城陵磯因洞庭之水由湘江匯入故其容量復增

辛　水面坡度及流速之變遷

本會因欲考察一定時期內城陵磯與枝江水面坡度及流速之關係以故上年即爲各該地流量測量之舉辦今歲庶續進行歷時數月其測法一如上年每日上午八時中午及下午四時三時期內就橫斷面處各測流速一次即於水面至江底間就測流器施行全體斷面流量測量共三次至坡度則就某橫斷面相去上下

游各一公里處測得之其兩公里間之三點各於白晝間施行水面流量測量一次以每二分鐘記載一次下表所列係表明全年所得之成績

枝江水面幾坡度及流速之變遷表

日期	時間	各站之水平（吳淞水平線零度）			甲與丙站相差數	乙站每秒鐘平均流速
		甲站	乙站	丙站		
十五年一月二十三日	上午八點	三八·四七一	三八·四五一	三八·四〇九	〇·〇六二	〇·六六〇
	正午	三八·四七六	三八·四五二	三八·四一三	〇·〇六三	〇·六六〇
	下午四點	三八·四七三	三八·四四九	三八·四〇六	〇·〇六七	〇·六五三
十五年二月九日	上午八點	三八·六〇六	三八·五七八	三八·五五六	〇·〇五〇	〇·六九九
	正午	三八·六一〇	三八·五八一	三八·五六二	〇·〇四八	〇·七〇一
	下午四點	三八·六一三	三八·五八三	三八·五六七	〇·〇四六	〇·七〇六
十五年三月二十一日	上午八點	三八·四五七	三八·四二八	三八·四一〇	〇·〇四七	〇·六九一
	正午	三八·四六一	三八·四三三	三八·四一三	〇·〇四八	〇·六九六
	下午四點	三八·四五九	三八·四三四	三八·四一五	〇·〇四四	〇·七〇〇
十五年四月十九日	上午八點	四〇·一六五	四〇·一一一	四〇·〇八七	〇·〇七八	一·〇一七
	正午	四〇·二三九	四〇·一八三	四〇·一六二	〇·〇七七	一·〇五五

	下午四點	四〇・二八六	四〇・二三三	四〇・二一八	〇・〇六八	一・〇八〇
十五年五月十五日	上午八點	四〇・九六四	四〇・八九四	四〇・八七五	〇・〇八九	一・三三〇
	正午	四〇・八九三	四〇・八二五	四〇・八〇七	〇・〇八八	一・二七二
	下午四點	四〇・八一七	四〇・七五二	四〇・七三三	〇・〇八五	一・二七六

城陵磯水面綫坡度及流速之變遷表

日期	時間	各測站之水平(吳淞水平線零度) 甲站	乙站	丙站	甲與丙站相差數	乙站每秒鐘平均流速
十五年一月二十日	上午八點	一八・六〇九	一八・五八〇	一八・四七三	〇・一三六	〇・九六一
	正午	一八・六二二	一八・五九三	一八・四八八	〇・一三四	〇・九八二
	下午四點	一八・六三八	一八・六二一	一八・五〇九	〇・一二九	〇・九四七
十五年二月二十日	上午八點	一九・九〇八	一九・八八〇	一九・八二八	〇・〇八〇	一・〇一八
	正午	一九・九〇五	一九・八七九	一九・八二九	〇・〇七六	〇・九七九
	下午四點	一九・九一三	一九・八八二	一九・八三二	〇・〇八一	〇・九九五
十五年三月十二日	上午八點	二二・二七三	二二・二三九	二二・一九七	〇・〇七六	一・〇七五
	正午	二二・二七五	二二・二三九	二二・一九八	〇・〇七七	一・〇八〇
	下午四點	二二・二八三	二二・二四七	二二・二〇六	〇・〇七七	一・〇九四

十五年四月二十二日	上午八點	二二・三八五	二二・三六二	二二・三三〇	○・○五五		一・二四八
	正午	二二・四四七	二二・四二九	二二・四〇〇	○・○四七		一・二六一
	下午四點	二二・五二〇	二二・四九九	二二・四七〇	○・○五〇		一・二九二
十五年五月十八日	上午八點	二四・七一九	二四・七〇九	二四・六七九	○・○四〇		一・二〇二
	正午	二四・七〇四	二四・六九四	二四・六六八	○・○三六		一・二一一
	下午四點	二四・六九二	二四・六八三	二四・六五二	○・○四〇		一・一九〇

附註　乙站地點卽設於橫斷面處甲與丙站各距乙站一公里

第三節　漢口斷面之深度

漢口斷面深度之測量係自上年十一月起測庶續接辦至本年五月爲期七月是爲揚子江最底水位時期上期報告業已具陳梗概本年報告書中復爲簡明之紀錄

就漢口之橫斷面綫均分爲十三段距離約一千九百公尺並於各段測量深度復採用海關水尺零度繪製成圖每段各具一圖其縱斷面亦按原比例附製圖內

同時又爲江流方向及流率之測量江流方向之測法係用浮標五具置於同一線上距離大致相等復於某種時期縱之飄泛以浮至五千公尺處爲度其經過之路綫卽表明江流之方向並就飄流經過時期及其路程而計算其流率

第六十九圖係表明漢口測站之橫斷面綫及設置浮標綫第七十至八十八圖係表明流量深度第八十九

至一百二十二圖係表明各該處之縱斷面

第四節　江底之變遷

江底變遷之原不外淤刷本會就揚子中游支流各測站測其深度並繪製斷面圖詳見第一百二十三至一百二十四圖由是而全年內最高水位及最低水位暨平水位時江底淤墊及沖刷情形均可瞭如指掌矣

第五節　雨量

本會所設之揚子流域雨量測站本年因軍事影響郵遞艱阻以及各站所得報告有不甚完備者有悉行梗阻久未寄到者然內地教會爲協助搜集起見恆不憚遠道寄報是實爲本會所深致感謝者（參閱第一百二十五至一百二十八圖）

第六節　泥沙成分

本會曾於上年考察揚子中游泥沙成分並於測量流量時同時採取江水標本以爲決定泥沙成分之用本年仍應續舉辦於四五月截止其漢口一處本年一月至五月復行重測一次至湖江一處則自本年二月起從事採集惟因軍事影響僅止四月復致中輟（參閱第一百三十至一百三十二圖）

採取江水標本之法一如舊例就每一測站之橫斷面處採取標本四份即水面及三分一三分二暨江底各一份下列各表係表明每斷面處之泥沙成分之平均百分數

漢口揚子江泥沙量之平均數目表

月日	水位高度（淡口海關水平零度）英尺	水位高度（淡口海關水平零度）公尺	流量 每分鐘之立方公尺數	泥沙量 百萬分一之重率	泥沙流量 每分鐘之公噸數
十五年一月十七日	四·六	一·四〇	七、二〇〇	二一四	一·五四〇
二月二十四日	九·〇	二·七四	九、八〇〇	二三一	二·二六一
三月十三日	一七·〇	五·一八	一五、六〇〇	二四〇	三·一四二
三月三十一日	一四·四	四·三九	一三、六〇〇	一八八	二·五五八
四月二十二日	一五·五	四·七二	一四、四〇〇	三三六	四·八四〇
四月二十八日	一八·〇	五·四九	一六、四〇〇	二五八	四·二三〇
五月十三日	二三·〇	七·〇一	二〇、八〇〇	四二〇	八·七四〇

枝江揚子江泥沙量之平均數目表

月日	水位高度（淡口海關水平零度）英尺	水位高度（淡口海關水平零度）公尺	流量 每分鐘之立方公尺數	泥沙量 百萬分一之重率	泥沙流量 每分鐘之公噸數
十五年一月六日	四·〇	一·二二	四、八〇〇	一二〇	〇·五八五
一月十八日	四·七	一·四三	五、四一〇	二四八	一·三四〇
二月三日	二·六	〇·七九	四、一九〇	八〇	〇·三三五
二月十七日	三·二	〇·九八	四、四七〇	九四	〇·四二〇

三月八日	五·一	一·五五	六、六二〇	五九二	三·九一八	
三月二十五日	四·七	一·二五	四、九九〇	四九	〇·二四四	
四月十一日	六·〇	一·八三	九、一四〇	九九	〇·九〇五	

城陵磯揚子江泥沙量之平均數目表

月日	水位高度（淡口海關水平零度）英尺	公尺	流量 每分鐘之立方公尺數	泥沙量 百萬分一之重率	泥沙流量 每分鐘之公噸數
十五年一月八日	三·七	一·一三	七、七三〇	四〇〇	三·〇九〇
二月三日	二·六	〇·七九	六、五三〇	三五五	二·三一八
三月二十九日	一三·一	三·九九	一三、〇四〇	一九三	二·五一九
四月十四日	七·八	二·三八	九、一一〇	二八五	二·五九五
五月四日	一二·三	三·七五	一三、二〇〇	三八八	五·一二〇

尺八口揚子江泥沙量之平均數目表

月日	水位高度（淡口海關水平零度）英尺	公尺	流量 每分鐘之立方公尺數	泥沙量 百萬分一之重率	泥沙流量 每分鐘之公噸數
十五年一月二十三日	七·六	二·三一	五、〇四〇	五一〇	二·五七〇
二月十八日	一〇·〇	三·〇五	四、八二〇	二五八	一·二四四

三月十六日	一六・六	五・〇五	四八五〇	二九〇	一・四〇七
四月十六日	一一・〇	三・三五	五三七〇	二八二	一・五一二
五月五日	一六・七	五・〇八	八〇二〇	四六〇	二・六九〇

湘陰湘江泥沙量之平均數目表

月日	水位高度（淺口海關水平零度）		流量	泥沙量	泥沙流量
	英尺	公尺	每分鐘之立方公尺數	百萬分一之重率	每分鐘之公噸數
十五年二月二十八日	一五・七	四・七九	二六六〇	一二六	〇・三三五
三月二十三日	二〇・〇	六・一〇	三九七〇	一七七	〇・七〇二
三月三十一日	一〇・八	三・二九	一六〇〇	四四	〇・〇七〇
四月十六日	一三・〇	三・九六	一四二〇	一〇〇	〇・一四二
五月十日	一四・〇	四・二七	一九五〇	一五二	〇・二九六
五月二十五日	一五・三	四・六六	一五七〇	一二五	〇・一九六

附註　每公噸爲一千啟羅格蘭姆

第三章　地形測量

第一節　測量

地形測量隊原擬竣繪製地形斷面圖後即行興辦洞庭湖及湘江各區地形惟因軍事及水災影響以致原定計畫多未見諸實行全隊職員僅於五六七三月內舉辦瀏陰以下之湘江地形測量本會固仍切望時局早就安謐而此項重要之測事復得展續籌辦也

地形測量隊自湘江測事停止後因即逕至防灾隊襄辦防災測量事宜其成績詳見防災報告

第二節　圖

鄱陽湖區地形圖經本會測成者共計四百幀本年本會業經製成三百幀刊印發行其他一幅現已趕製完竣不日即行付印圖中所有關於流量地形深度及水面線之各項資料亦經一併附入藉便參閱計已付印者爲(一)湖口至屏風山(二)屏風山至東邊山(四)大雞山至黃金嘴未付印者爲第三幀即東邊山至大雞山

本會所製地形各圖其比例原爲〇・〇〇〇〇六惟篇幅過巨瀏覽維艱因用窩眞器縮製較原圖減小三分之一其比例爲 1:25000

地形測量隊因改調辦理防災事宜得防災地形圖數幀第一百三十三圖係表明赤磯山與禹觀山之地形圖圖中附載改良金水閘壩及引河之各計畫第一百三十四圖爲赤磯山地形圖第一百三十五圖爲禹觀山地形圖均附有考察地質之地點

第四章　水準及坡度

第一節　精確水準

自吳淞口起至宜昌之精確水準線業於本年五月二十六日完全測竣計全線長一千七百七十公里（約合一千一百英里）所有全線水準標點均經裝設齊備以是而全江高低確數均可由此定之

精確水準在上年年底係測至大復街今年接續測至宜昌約一百二十五公里迄本年三月始獲報竣此線經往返復勘其相差數爲二五三五・公里即

$$\pm 1.35\sqrt{1253.5}\text{公厘}$$

此距離間之相差標準數不得較大於

$$\pm 5.0\sqrt{\text{距離公里數}}\text{公厘}$$

就上列之標準公式觀之可知本會精確水準之相差數尙未及半

自漢口至宜昌之精確水準綫曾經往返復測其距離共計六百四十五公里所得之相差數爲三〇・八六公厘即

$$\pm 1.35\sqrt{645}\text{公厘}$$

此數較諸前列公式其相差約有四分之一

自吳淞至宜昌之精確水準全綫經往返經過之至精密之復測在一千七百七十公里距離間所得之相差數爲三一・五二公厘即

$$\pm 1.35\sqrt{1770}\text{公厘}$$

此數較諸前列公式其相差數爲七分之一

在宜昌附近第五百八十一號水準標處約距漢口六百三十七公里其最大之相差數爲四二公厘即

$$\pm 0.6\sqrt{K}\text{公厘}$$

此數似已過巨惟比諸前列公式仍未超越

本會所辦之精確水準測量迄宜昌即行全部告竣本年四月間因於城陵磯地方接測淞江精確六月間因軍事發生測事遂暫中輟計已測得之精確水準爲城陵磯至磊石山之一段計長八十七公里並經往返復測其差數爲六、四八公厘即

$$\pm 0.9\sqrt{K}\text{公厘}$$

自吳淞經城陵磯至磊石山之精確水準全綫經往返復測其差數爲八。四三公厘即

$$\pm 1.0\sqrt{K}\text{公厘}$$

此數比諸上列公式相差僅二十分之一

第二節　普通水準

普通水準恆與精確水準同時舉辦本會辦理之吳淞至宜昌間之水準除葛洲至吳淞一段原有其他機關設置之水準標應即採用外餘均由會另行分別安設

第一百四十六至一百四十七圖係表明本年精確及普通水準所得成績

第三節　同時水面綫

揚子江中游水位之記載係於上年年底由下游移辦其成績爲期尚未一年以故今年仍屆績與辦期滿一

載所有本期成績並經繪製成圖其中游各要埠之海關水位記載亦經由會採取分別附入第四圖係表明揚子中游各支流之同時水面綫茲爲比較便利起見並將揚子江同時水面綫一併繪入以便參酌

各水尺之水位記載均按精確水準標點厘定以故全年任何時期水之坡度均可據以推算上期報告關於各測站零度連接之坡度及水面綫並經分別製圖茲爲便利及明晰起見所有吳淞重慶間爲測站零度連接之坡度及水面綫並經繪製一圖參閱第一百四十八圖第一百四十九圖係表明金口至魯湖之金水水面綫其江底及水面各項記載均分繪圖內以便參稽

第四節　水準標

大復街至宜昌已測之精確水準綫計長一百八十五公里本會曾經設立固定水準標三十六處臨時水準標九十五處銅質水準標一處自城陵磯磊石山已測之瀏江精確水準綫計長八十七公里經設立固定水準標二十三處臨時水準標六十五處本年本會於下列各處增設銅質水準標八處

鎮江海關
南京東南大學
南京南京大學
蕪湖海關
九江海關

監利教堂

宜昌海關

岳州教堂（湘江）

上述之銅質水準標其設立之方法仍如上年報告係會同當地官紳辦理以期永久

本報告書外尚有水準標圖五十六幅可供參考

本會自開辦以來沿江所設之水準標共數如下表

揚子江水準標表

標類	吳淞至漢口	漢口至宜昌	宜昌至吳淞
	一二五公里	六四五公里	一七〇公里
固定	三三二	二〇九	五四一
臨時	五九二	三一四	九〇六
銅質	九	五	一四
標數	五六六	一六〇	七二六

各項水準標圖式已詳上期報告茲不再贅列

第五章　三角測量

揚子江中游三角測量之踏勘自上年上半年興辦以來積亟進行成績優贍惟因軍事影響踏勘時期僅有八月顧所獲資料較爲豐富而其計算尤形精審計本會所得成績可分三種（一）踏勘（二）角度（三）計算

茲並依次分述如下至本隊所用測量各方法悉依美國海港地形測量成法辦理

第一節　踏勘

踏勘隊爲舉辦三角測量之重要組織其經辦事務俾察視應測地段採選各項基綫及三角測站並消除有礙視綫之樹株及其他物品至測站之高度亦須由踏勘隊詳爲規定本會原計畫係將揚子江中游應辦測勘事務辦竣後即行庶續舉辦其他測事故本隊於本年一月勘至石首上四十公里之赫穴地方即行移歸改辦基綫角度勘定事宜

甲　基綫

漢口至郝穴約三百十五公里經踏勘之結果採得基綫二處(一)在武昌下游右岸(二)在城陵磯對岸中國海軍曾於漢口以下地方舉辦三角測量惟採用測法比之本會不無殊異以故本會測隊復由吳淞至漢口間就中國海軍所辦測量重行復量一次

本隊所用測量鋼尺關於張力溫度等均經詳加審驗比較精確製成標準鋼尺每量一地均以水平綫爲準故一基綫之丈量確定至少須經三次而鋼尺尤須對較準確精心工作所得基綫方能不致訛舛茲將丈量次數及其差數分別列表如下

基綫	平均長度(公尺數)	大概的差數(公尺數)	平均長度之差數		
		選採之二數	三數	選採之二數	三數

乙二——乙三	三三七五・九六六三	十	〇・〇〇四〇五	十	〇・〇三六二二	八三五・〇〇〇	九三・〇〇〇
乙五——乙六	四三七四・九九二五	十	〇・〇〇三二七	十	〇・〇〇五九〇	一三八〇・〇〇〇	七四二・〇〇〇

乙　測站之選擇

測站之選擇吾人所得之結果其最感困難者即兩站相距間樹木葱蘢妨礙視綫加以地盡平原高陵峻阜渺不可得故不得不剪伐樹株以通瞭眺量設高邨而窮遠目茲於每站繪具一圖關於各站間林木狀況並經詳細臚列以資參酌每站由會設置三角標點一具標爲方形係以洋灰製成寬四公寸高六公寸埋入土內顯於地上者僅一公寸半標之中心附以銅證表明該站標點之處惟此項標點顯露地上易致損失茲復另製同式附標一具埋於正標之下藉便尋覓兩標圖式附列於後

第二節　角度

本會因辦理三角測量特置寇氏測量器本年年初由漢起測惟因地形及基綫踏勘隊事務殷繁以故本隊時須協同辦理未能庶續從事迄八月下旬軍事發生而本隊測務遂悉停頓

初漢口地方本隊因辦理連接中國海道測量局三角測量基綫所有測量器具悉行分布隊內

測站標誌爲一圓形長杆上附橫牌圖以黑白二色期於明晰惟附漢各地烟霧迷濛測視良苦以故本隊改用最強電石燈乘夜勘測漢口至金口間自本年三月至八月共置十六站並測得基綫及角度

第三節　計算

本年因軍事影響本隊成績爲數無多一應計算擬於下期報告內再併詳之

第六章　防災

第一節　調查之大概

關於防災調查事宜本會自上年六月中旬興辦以來迄未中輟惟因軍事影響本年是項工作大都悉致停頓其最可引爲憾事者即金水規復計畫必須常年測量始獲觀成今以軍事之故而竟不得從事工作滋爲婉惜也顧本年成績間有可資報告者茲併臚陳於後

甲　搜集各縣資料之記載

乙　金水規復計畫

（一）　金水蓄水區之測量

（二）　金水流量及水面測量

（三）　禹觀山至赤磯山之地形測量

（四）　金水之地質勘驗

（五）　金口輪船往來之記載

（六）　設計及估算

丙　隄岸之特殊測量

上列各節其詳細情形茲併依次附詳於後

第二節　搜集各縣資料之記載

搜集各縣資料辦法其詳已見上期報告本年踏勘所經地方分別詳載於後

湖北　咸寧　沔陽　蒲圻　武昌

江西　盛家灣　黃茅潭　馬華隄（此處曾於今夏決口）　小池口　賈家鎮　二道口　張家洲

流澌橋　江橋　馬當　糧洲　陳灣　德安　金雞　黃灣

安徽　大通　宿松　望江　東流　懷寧　貴池　蕪湖　宣城

江蘇　南京

民國十五年江水暴漲其致蕩之劇烈有史以來此爲僅見

第三節　金水規復計畫

金水規復計畫本年仍應續接辦且較精審初本會計畫就金口上七公里之禹覲山（或赤磯山）地方建一土壩並置掺縫機閘俾江流盛漲不致有倒灌之虞且閘能自由啓閉而船隻往來亦得暢行無阻願此項計畫不惟需費浩鉅且王持是役者於設計建築歲修上均須詳察當地情形始獲着手興辦以故本會對於問題妥愼察度常川測勘茲就所得資料撮要分述如下

甲　金水蓄水區之測量

金水蓄水區域經會測量繪製成圖圖中表明地形及各湖深度暨隄岸並其支流等本年所辦是項測量其告成者已占三分之二均詳一百三十六至一百三十七圖本會踏勘隊曾就規復田畝製成大概估算書其

詳當俟全部測量告成方能確定

乙　金水流量及水面測量

金水流量本會曾經按時派隊勘測並於禹觀山建壩地方特具斷面並設測站按月測取流量四次或五次本年五月二十五日至七月十一日爲江流倒注時期嗣因揚子江客灣上游十七公里之蕭家洲地方決口金水遂得仍復故流關於流量記載已詳流量報告

金水水面測量本會曾於金口禹觀山及魯湖斧頭湖各地方設置測站逐日測勘記載並繪製成圖（參閱第四圖）由此則逐日江水與湖水之水面變遷均可於此推覽矣

丙　禹觀山至赤磯山之地形測量

第一百三十三圖係表明禹觀山與赤磯山地形簡明圖所有設閘地點啟閉閘門以及擬建土壩暨開挖引河均一併繪入以資參閱

第一百三十四至一百三十五圖係表明禹觀山與赤磯山之地形詳圖圖中關於山之產石區域以及本會掘驗地質地點均經一一詳細繪入先是本會考驗地質僅用人力挑挖嗣又改用掘地機掘驗其效果益臻精審此項掘驗工作截至本年年終尚未蔵事至所得成績茲併附載圖內藉便參稽

丁　金水之氣象記載

金水水流關係規復計畫至爲重要本會關於應辦之流量測量雖經設站辦理惟爲時尚暫就目前所得結果而論似尚不敷規畫之用顧擬設之閘壩其口門之大小究須若干自非先行測得精確之流量難期確定

本會所有流量記載既嫌不敷勢須就其他機關所得資料酌事採用夫水流之漲縮其原因要不外雨量及空氣蒸發暨土地與植物之吸收等狀況而已其詳見第一百二十九圖茲併分述如下

(一)雨量　漢口及岳州海關關於雨量及象候測驗之記載至爲詳盡漢口記載係自一八八〇年起至一九二六年止岳州記載係自一九一〇年起至一九二六年止金水居漢岳之間本會因得依據各該地之海關記載而研究金水之氣象左表係表明漢口四十六年以來之雨量成績

漢口雨量表

月分	自一八八〇年至一九二六年每月之平均雨量	自一八八〇年至一九二六年最大雨量 每月	年分	一八八九年雨量 每月總數	日數
一月	四五·三	一七二·二	一八八七	三七·八	九
二月	四八·六	一四九·九	一八八二	七七·七	一一
三月	九四·九	二五一·七	一九二〇	一二四·〇	一〇
四月	一四八·〇	四九四·五	一九一三	一七八·一	一七
五月	一六九·一	三九二·二	一八九八	二三二·九	二一
六月	二三六·〇	八一九·九	一八八七	五九七·二	一六
七月	一八一·七	五三二·九	一九〇一	一六九·四	一三
八月	九五·九	四五六·四	一九〇六	八一·三	一〇

九	月	七二・七	四一四・八	一九一五	三一四・七	一七			
十	月	八〇・七	二七八・九	一八八六	二二九・六	二〇			
十一	月	四八・八	二二六・一	一九一八	六一・五	一二			
十二	月	二七・四	一三一・八	一八九九	一・三	五			

※ 本年係最大雨量其總數爲二一〇五・五公厘

(二)蒸發與吸收　蒸發記載揚子江中游所屬海關往昔並未從事本會因考察本區蒸發量爰於金水之禹觀山及斧頭湖之廟嘴地方各設測站着手勘驗其法係用蒸發巨盤二具滿盛以水一置地上加以覆被一置水面任其顯露每日記載其減縮之量計禹觀山地方係由本年七月一日起驗廟嘴地方則自八月一日起驗關於每日最高最低溫度以及雨量有無暨其他氣象之變遷均經一併記載

上項測驗辦法行之日久則其成結自較精確而於規復計畫裨助尤多本會固切望此項測驗工作之得續辦不輟而得獲充分之資料以供採用也蒸發量與金水流量測量之計算關係至爲重大現在蒸發實驗結果既難數用爲目前規畫便利計惟有先就蒸氣壓力空氣濕度風力速率之關係而推測之漢口海關於近數年內對於上述之壓力濕度速率已有詳確之考驗本會因就其考驗之結果而推算金水之蒸發量以現勢論固亦可爲參稽至要之資料也參閱一百二十九圖

(三)吸收　植物之吸收力恒恃各地方生產情形而生變化經實地測勘始能定之至於土地之吸收力則因本區土壤堅實且高出海平線無多其吸收之力甚微故此種問題於本計畫中尚無重大之關係

戊　輪船往來

本計畫規定採用啟閉機閘之原因蓋由便利輪船往來故耳惟一年之中金水輪船究有若干種類如何均須預爲考察本會有鑒及此爰於禹觀山地方設站考察所有往來船隻均經逐日記載自本年六月起迄年終止惜爲時僅止七月所得資料尙嫌不敷明年當再庶續接辦也茲就本年所得記載列表如下

金水禹觀山處來往船隻數目表　民國十五年六月至十二月

日期	上溯船隻					下駛船隻					平均每日總數
	甲	乙	丙	丁	平均總數	甲	乙	丙	丁	平均總數	
一日	二	七	一四	二六	四九	二	九	一五	二八	五四	一〇三
二日	二	八	一五	二八	五三	二	六	一五	二六	四九	一〇二
三日	二	八	一五	二八	五三	一	九	一四	二八	五二	一〇五
四日	二	九	一八	二九	五八	二	六	一一	三二	五一	一〇九
五日	二	九	一七	三二	六〇	二	一〇	一四	三一	五七	一一七
六日	一	八	一七	二九	五五	二	一一	一二	二四	四九	一〇四
七日	一	八	一七	三一	五七	二	九	一五	二五	五一	一〇八
八日	二	八	一九	二八	五七	二	七	一三	二七	四九	一〇六
九日	二	八	一九	三〇	五八	二	九	一六	三五	六二	一二〇

十日	一	八	一七	二九	五五	二	八	一五	三二	五七	一一二
十一日	二	八	一七	三一	五八	二	九	一六	三〇	五七	一一五
十二日	二	二一	三三	三六	九二	二	七	一二	二九	五〇	一四二
十三日	二	一三	二二	二九	六六	二	八	一二	二八	五〇	一一六
十四日	二	一〇	一八	二四	五四	二	六	一〇	二五	四三	九七
十五日	二	一七	二四	二九	七二	二	五	九	二三	三九	一一一
十六日	二	八	二〇	二八	五八	二	六	一〇	二八	四六	一〇四
十七日	二	一四	二二	三八	七六	二	一〇	一三	三七	六二	一三八
十八日	二	一一	二二	三四	六九	二	八	一三	三八	六一	一三〇
十九日	二	九	二〇	二九	六〇	三	八	一二	三二	五五	一一五
二十日	二	八	一八	三二	六〇	三	一三	一五	三二	六三	一二三
二十一日	二	一〇	一六	二四	五二	二	九	一二	二七	五〇	一〇二
二十二日	二	一〇	一八	三三	六三	三	五	一〇	三二	五〇	一一三
二十三日	三	一一	一八	二八	六〇	二	八	一二	三一	五三	一一三
二十四日	三	一一	一六	三一	六一	三	一一	一四	三九	六七	一二八
二十五日	三	一一	二一	三〇	六五	二	九	一五	三二	五八	一二三

每日各種船隻平均數	二十六日	二十七日	二十八日	二十九日	三十日	三十一日
	二	三	二	三	二	三
	九	八	一一	一〇	一〇	八
	一九	二〇	一八	一七	一九	一八
	三三	三〇	二七	二五	二八	二七
	六三	六一	五八	五五	五九	五六
	三	二	二	二	二	三
	一〇	八	九	九	一〇	一〇
	一九	一三	一三	一二	一六	一五
	三七	二九	二七	二七	三〇	二六
	六九	五二	五一	五〇	五八	五四
	一三二	一一三	一〇九	一〇五	一一七	一〇
						一一四

附註　來往船隻約分甲乙丙丁四種甲爲輪船長二十五公尺寬五公尺半喫水一・三七公尺乙爲大號帆船長十二至二十四公尺寬二至五公尺喫水一・二公尺丙中號帆船長五公尺半以上寬一・二公尺以上丁漁船及其他小船

己　閘壩工程之概算

金水閘壩工程之概算上期報告中已略詳梗概本年所得資料復漸增多原編概算重行編定赤磯山對岸禹觀山下游一公里地方經會選經施行掘驗工程知其土性堅實堪充建閘基礎之用因是暫定計畫繪具詳圖已另呈政府茲不贅述僅撮要臚陳如下

金水建閘問題至爲繁複其原因蓋由揚子江之水面綫變化靡常而閉閘後其上游之水面綫亦復變幻無定以故本區之氣象流量及揚子金水匯流處之各種變化均須一一詳加研究冀臻周密上海徐家滙天文

台及沿江各海關類似此項之資料本會均經儘數採用然其結果亦僅能備具一暫時之計畫而已

閘之建設其主要原因既經側重往來輪船故本會復經建議就禹龍山建塢處添築傾斜鐵道一段置辦載水車平均載重車發動機起重機及鐵軌等凡往來輪隻通過本閘均置諸載水車中用鐵練曳之渡越其拖曳之力應否採用水力或汽機當再酌察情形定之

閘內外之水平每年中僅兩個月期間相差甚微約有三尺在此期內水力不敷拖曳事實上則須採用以下所列之五種辦法

（一）十個月內用臥輪車二個月內用水道間之陸運道

（二）十個月內用臥輪水車二個月內用汽機

（三）十二個月內悉用汽機

（四）十個月內用臥輪水車二個月內用汽油機

（五）十二個月內悉用汽油機

上列各辦法均經本會繪具詳圖編定預算另呈政府核辦茲不再贅

第四節　隄岸之特殊測量

本會辦理之地形測量凡有隄岸處均經一併測繪茲因注重防災計畫故於重要隄岸加以特殊測量自赤磯山至馬鞍山爲揚子江右岸係屬官隄本會於本年五月開始測量迄七月四日本隄潰決數處各垸悉致淹沒坐是測務中輟計測竣者約二十五里幾占全隄之半成橫斷面圖七十一幀第一百三十八至一百三

十九圖係表明測得之堤岸一百四十圖至一百四十五圖係表明測得之各斷面圖

HORIZONTAL DISTANCE IN KILOMETERS
計里公以縱距面積
ELEVATION IN METERS ABOVE WOOSUNG HORIZONTAL ZERO
計尺公以與吳淞大沽原零平面起算
YANGTSE RIVER CONSERVANCY
LONGITUDINAL SECTIONS
HANKOW TO LUHU
PLATE 149

揚子江流域委員會
YANGTSE RIVER COMMISSION
LONGITUDINAL SECTIONS
YANGTSE WATER SURFACE
WOOSUNG TO CHUNGKING
PLATE 148
ELEVATION IN METER ABOVE WOOSUNG HORIZONTAL ZERO
HORIZONTAL DISTANCE IN KILOMETERS
OUTFALL
0
200
400
600
800
1000
1200
1400
1600
1800
2000
2200
2400
25
50
75
100
125
150
175

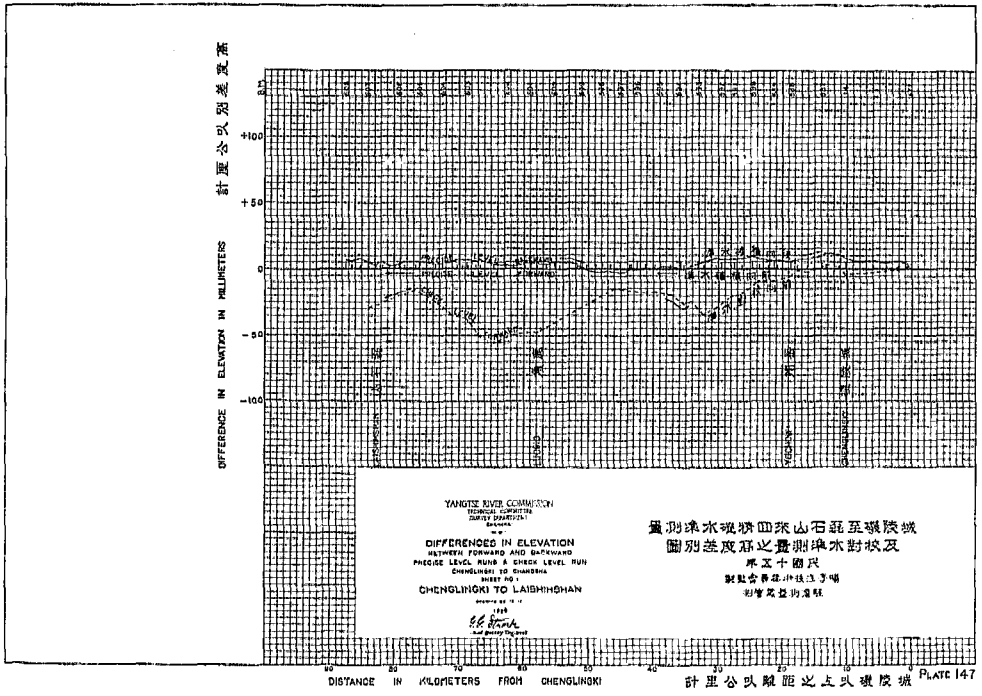
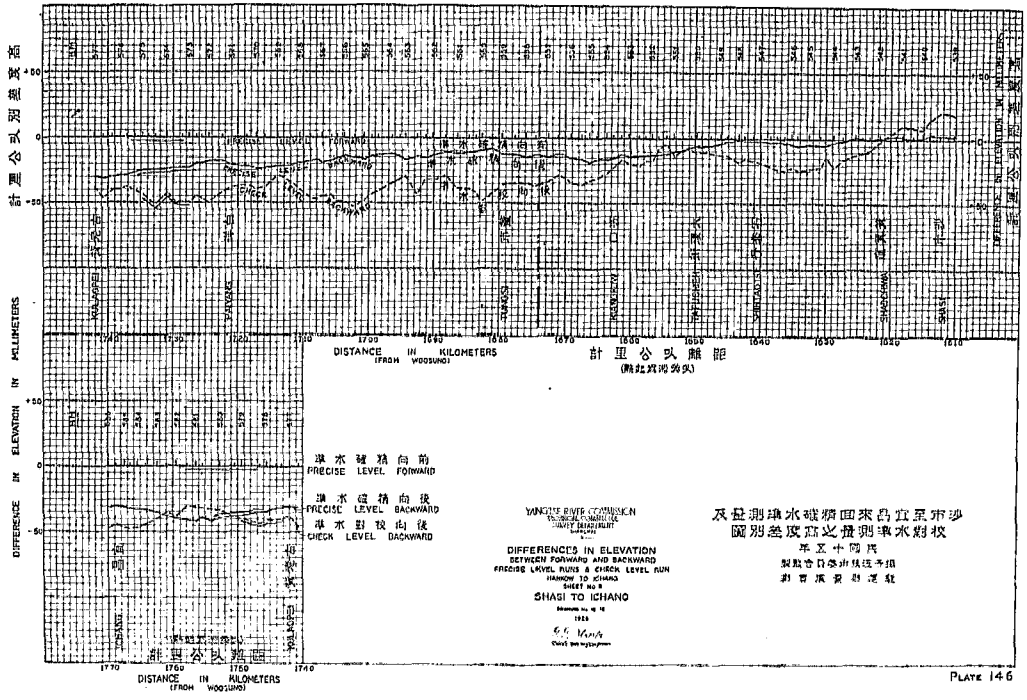

DIFFERENCE IN ELEVATION IN MILLIMETERS
計厘公以別差度高
+100
+50
0
-50
-100
DISTANCE IN KILOMETERS FROM CHENGLINGKI
計里公以距之点以城陵城
YANGTZE RIVER COMMISSION
DIFFERENCES IN ELEVATION
BETWEEN FORWARD AND BACKWARD
PRECISE LEVEL RUNS & CHECK LEVEL RUN
CHENGLINGKI TO CHANGSHA
SHEET NO. 1
CHENGLINGKI TO LAISHIHOHAN
量測準水線勝四采山石磊至城陵城
圖別差度高之量測準水對校及
第五十圖民
CHANGSHA
YOCHOW
CHENGLINGKI

PLATE 147


DIFFERENCE IN ELEVATION IN MILLIMETERS
計量公釐別差度高
DISTANCE IN KILOMETERS (FROM WOOSUNG)
計里公釐離距
(離北寶陽吳從)
導水碟精向前
PRECISE LEVEL FORWARD
導水碟精向後
PRECISE LEVEL BACKWARD
導水對校向後
CHECK LEVEL BACKWARD
YANGTZE RIVER COMMISSION
TECHNICAL DEPARTMENT
SURVEY DIVISION
DIFFERENCES IN ELEVATION
BETWEEN FORWARD AND BACKWARD
PRECISE LEVEL RUNS & CHECK LEVEL RUN
HANKOW TO ICHANG
SHEET No. 8
SHASI TO ICHANG
及量測導水碟精向來向宜至市沙
國別差度高之量測導水對校
PLATE 146

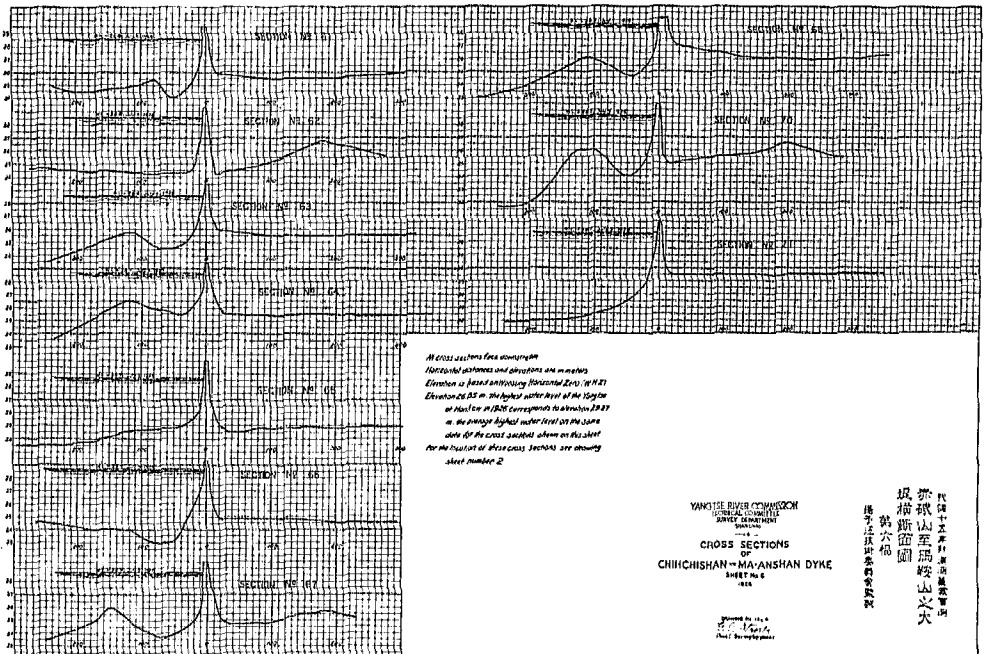
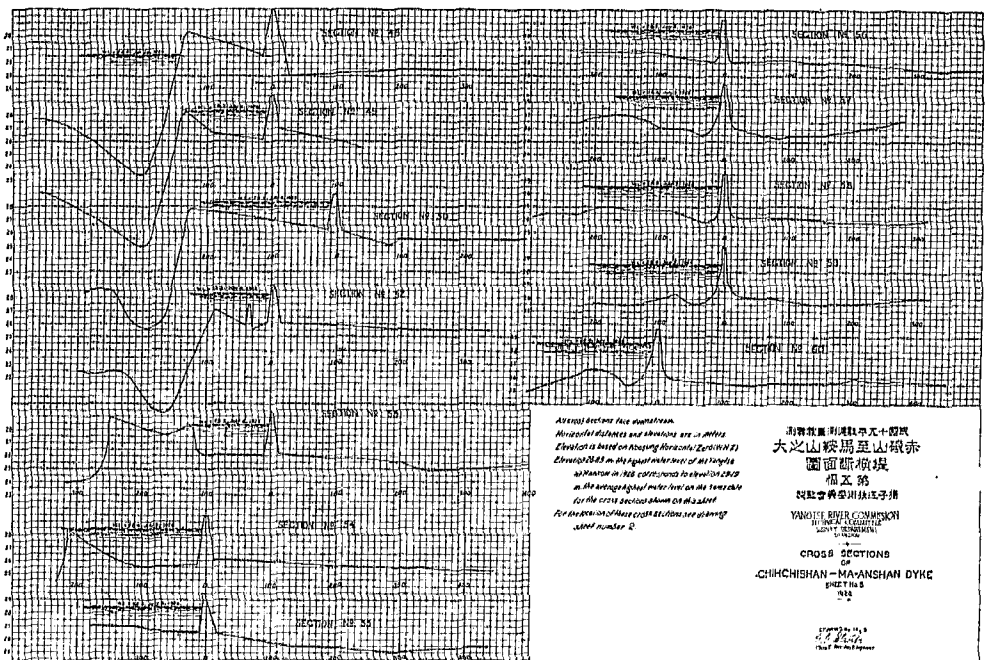

SECTION NO. 61
SECTION NO. 62
SECTION NO. 63
SECTION NO. 64
SECTION NO. 65
SECTION NO. 66
SECTION NO. 67
SECTION NO. 68
SECTION NO. 69
SECTION NO. 70
SECTION NO. 71
SECTION NO. 72
All cross sections face downstream
Horizontal distances and elevations are in meters
Elevation is based on Wusung Horizontal Zero (in H.D.)
Elevation 26.85 m. the highest water level of the 1954 flood at Hankow in 1935 corresponds to elevation 29.27 m. the average highest water level on the same date for the cross sections shown on this sheet
For the location of these cross sections see drawing sheet number 2
YANGTSE RIVER COMMISSION
TECHNICAL COMMITTEE
SURVEY DEPARTMENT
CROSS SECTIONS
OF
CHIHCHISHAN to MA'ANSHAN DYKE
SHEET No. 6
1954

PLATE 145



All cross sections face upstream.
Horizontal distances and elevations are in meters.
Elevation is based on Nanjing Horizontal Zero (NHZ).
Elevation 23.85 m. the equal water level of all heights at Hankow in 1931 corresponds to elevation 23.12 m. the average flood water level on the town site for the cross sections shown on this sheet.
For the location of these cross sections, see drawing sheet number 2.

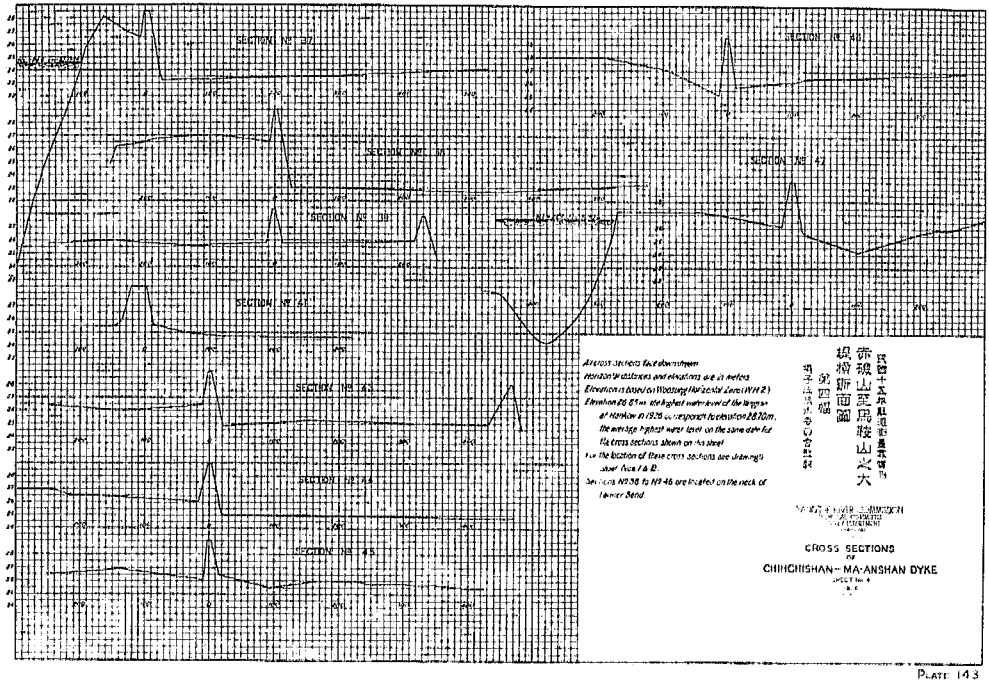
湖南省瀏陽縣屬第五十四號
大义山鞍馬至山根赤
圖面斷橫堤
橫五第
與點雪義堂測繪五子清

YANGTZE RIVER COMMISSION
HYDRAULIC LABORATORY
NANKING, CHINA

CROSS SECTIONS
OF
CHICHISHAN - MA-ANSHAN DYKE
SHEET No 3
1931

Chief Engineer

PLATE 144



All cross sections face downstream
Horizontal distances and elevations are in metres
Elevation is based on Woosung (Horizontal Zero) (WH 2)
Elevation 26.61 m. the highest watermark of the typhoon of Hsinhow in 1936 corresponds to elevation 28.70m. the average highest water level on the same date for the cross sections shown on this sheet
For the location of these cross sections see drawings Nos 1 & 2
Sections NR 38 to NR 46 are located on the neck of Hanger Sand

赤嶺山至馬鞍山壩大橫斷面圖

CROSS SECTIONS
OF
CHIHCHISHAN – MA-ANSHAN DYKE

PLATE 143

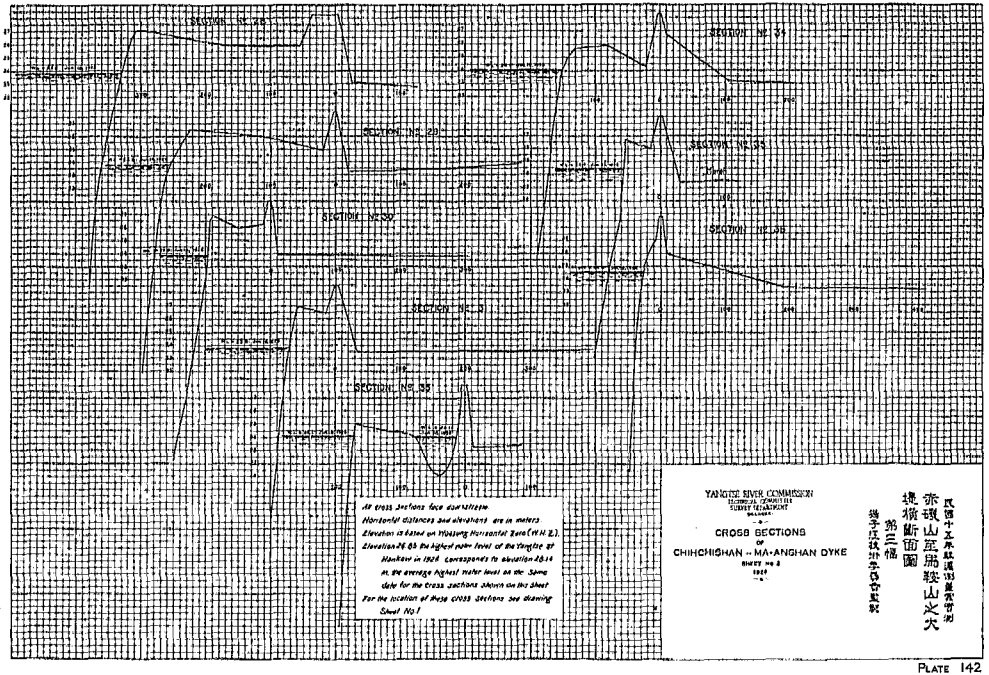
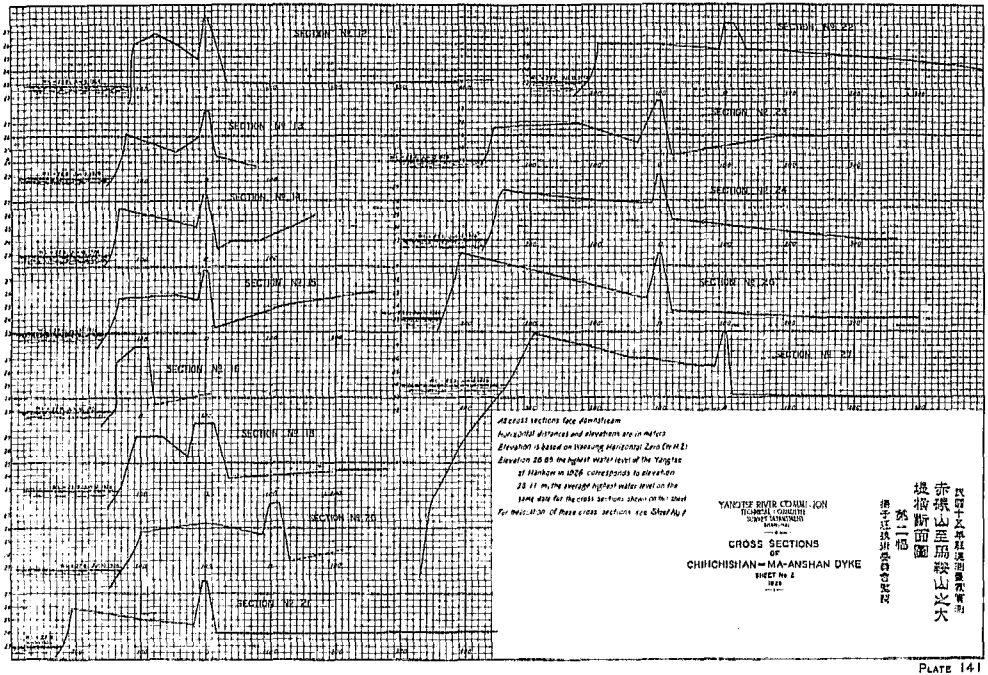

SECTION NO. 28
SECTION NO. 29
SECTION NO. 30
SECTION NO. 31
SECTION NO. 32
SECTION NO. 33
SECTION NO. 34
SECTION NO. 35
SECTION NO. 36
All cross sections face downstream
Horizontal distances and elevations are in meters
Elevation is based on Woosung Horizontal Zero (W.H.Z.)
Elevation 26.69 the highest water level of the Yangtze at Hankow in 1924 corresponds to elevation 18.14 M. the average highest water level as the same date for the cross sections shown on the sheet
For the location of these cross sections see drawing Sheet No 1
YANGTSE RIVER COMMISSION
TECHNICAL COMMITTEE
SURVEY DEPARTMENT
CROSS SECTIONS
OF
CHIHCHISHAN – MA-ANSHAN DYKE
SHEET NO 2
揚子江水利委員會
測量組
赤磯山至馬鞍山堤線斷面圖
第二幅

PLATE 142



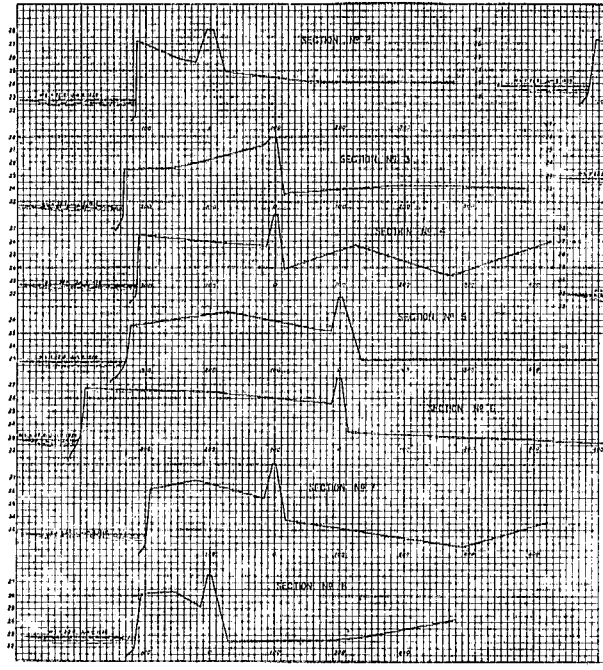
All cross sections face downstream
horizontal distances and elevations are in meters
Elevation is based on Wusong Horizontal Zero (m W.S)
Elevation 28.85 the highest water level of the Yangtze
at Hankow in 1926 corresponds to elevation
23.11 m, the average highest water level on the
same date for the cross sections shown on this sheet
For Detail of Rose cross sections see Sheet No 6

YANGTSE RIVER COMMISSION
TECHNICAL COMMITTEE
SURVEY SUBCOMMITTEE

CROSS SECTIONS
OF
CHIHCHISHAN-MA-ANSHAN DYKE
SHEET No 5
1929

赤磯山至馬鞍山之大堤橫斷面圖
第二號
揚子江水利委員會測量組製

PLATE 141



All cross sections face downstream.
Horizontal distances and elevations are in meters.
Elevation is based on Wusung Horizontal Zero (W.H.Z.)
Elevation 26.85 m. the highest water level of the Yangtze at Hankow in 1931 corresponds to elevation 28.66 m. the average highest water level on the same date for the cross sections shown on this sheet.
For the location of these cross sections see drawing Sheet No. 1

YANGTZE RIVER COMMISSION
TECHNICAL COMMITTEE
SURVEY DEPARTMENT
SHANGHAI

CROSS SECTIONS
OF
CHIHCHISHAN—MA-ANSHAN DYKE

SHEET NO. 1
1931

揚子江水利委員會
技術委員會
測量組

赤磯山至馬鞍山大堤
堤橫斷面圖
第一幅

PLATE 140

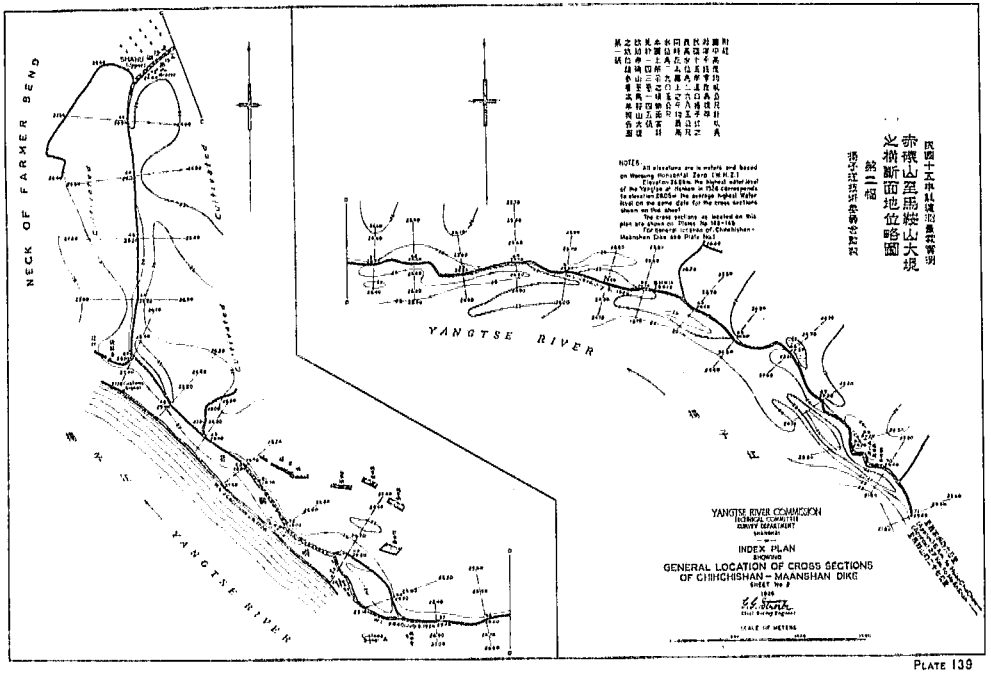

NECK OF FARMER BEND
YANGTSE RIVER
YANGTSE RIVER
NOTES
All elevations are in metres and based on Wansung Horizontal Zero (W.H.Z.)
Elevation 25.83m. the highest water level of the Yangtse at Hankow in 1938 corresponds to elevation 28.05m. the average highest Water level on the same date for the cross sections shown on this sheet.
The cross sections as located on this plan are shown on Plates No. 142-153.
For General Location of Chinkishan-Maanshan Dike see Plate No.1
YANGTSE RIVER COMMISSION
TECHNICAL COMMITTEE
SURVEY DEPARTMENT
INDEX PLAN
SHOWING
GENERAL LOCATION OF CROSS SECTIONS
OF CHINKISHAN – MAANSHAN DIKE
SHEET No 2
1946
SCALE OF METRES
赤磯山至馬鞍山大堤
之橫斷面地位略圖
第二幅
揚子江水利委員會技術委員會
測量課

PLATE 139

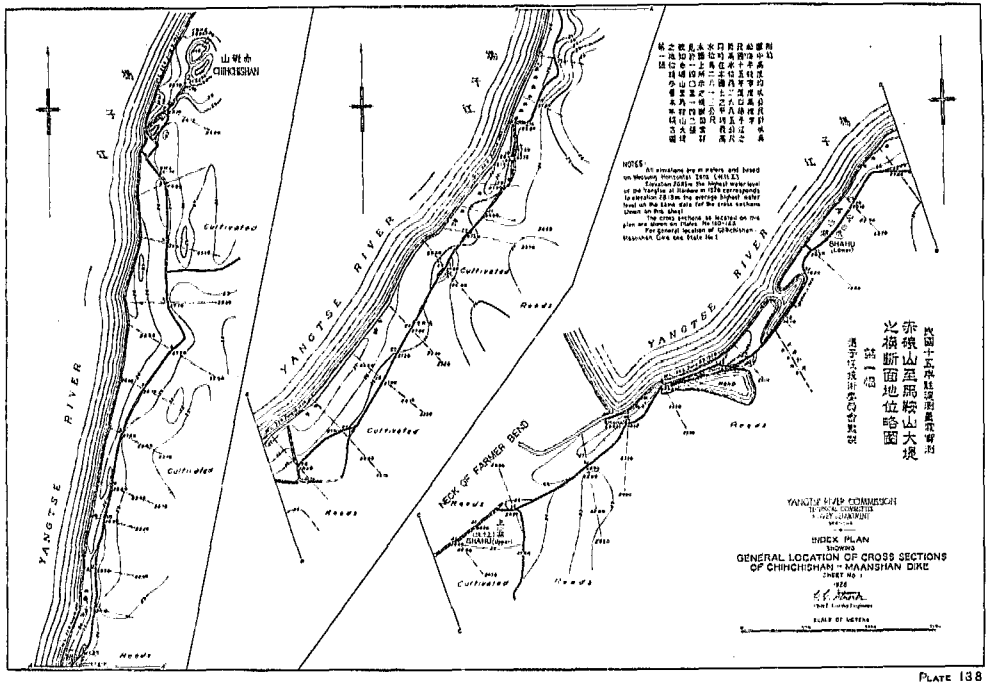

YANGTSE RIVER
YANGTSE RIVER
YANGTSE RIVER
NECK OF FARMER BEND
Cultivated
Roads
NOTES.
INDEX PLAN
SHOWING
GENERAL LOCATION OF CROSS SECTIONS
OF CHINCHISHAN - MAANSHAN DIKE
SHEET NO. 1
SCALE OF MILES

PLATE 138

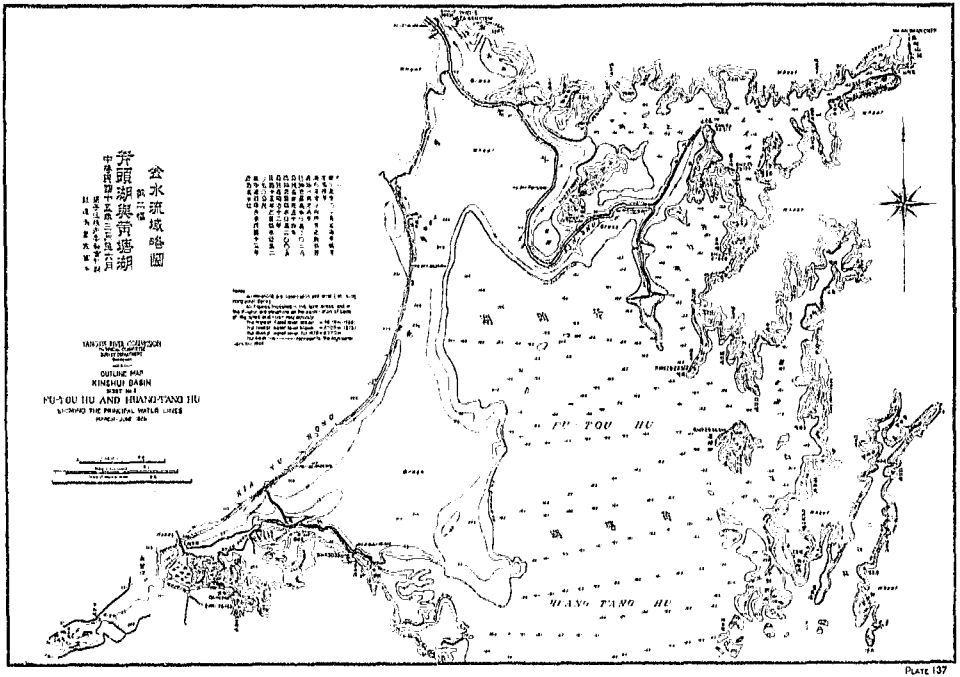
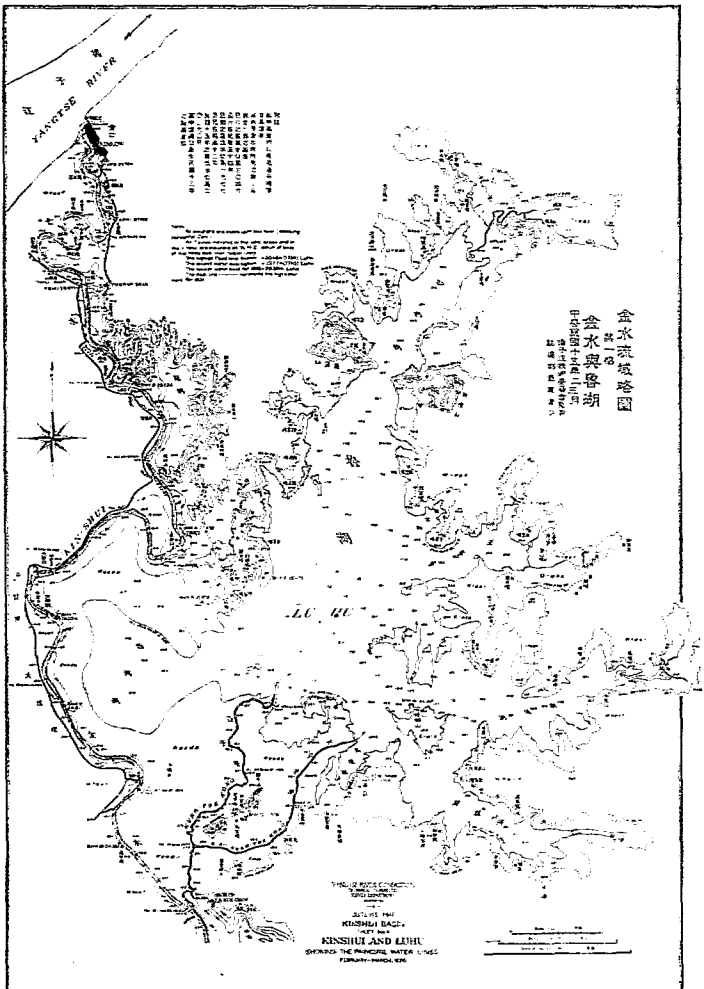

金水流域略圖
第二幅
附頭湖與黃塘湖
OUTLINE MAP
KINSHUI BASIN
SHEET NO. 2
FU-TOU HU AND HUANG-TANG HU
SHOWING THE PRINCIPAL WATER LINES
FU TOU HU
HUANG TANG HU

PLATE 137



金水武城略圖

金水與魯湖

Plate 138

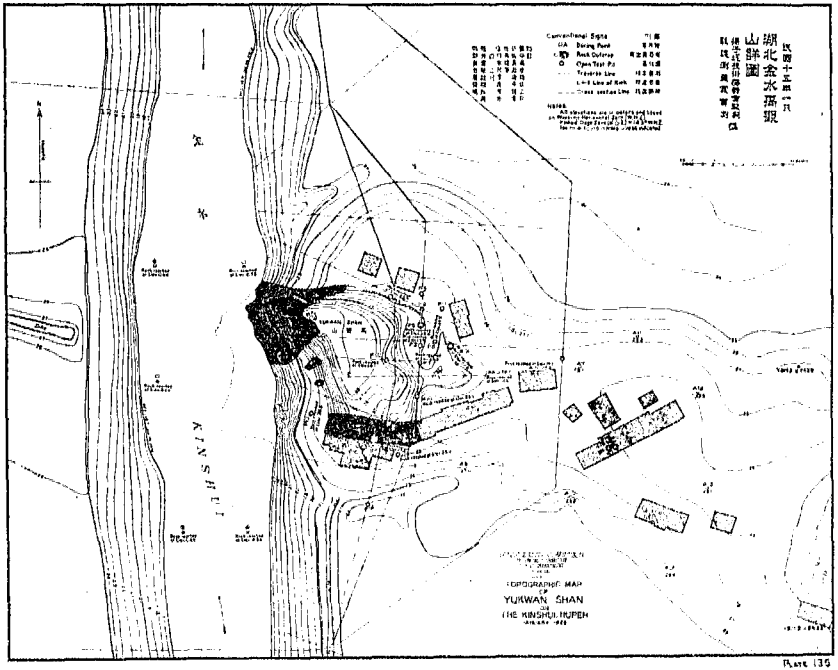
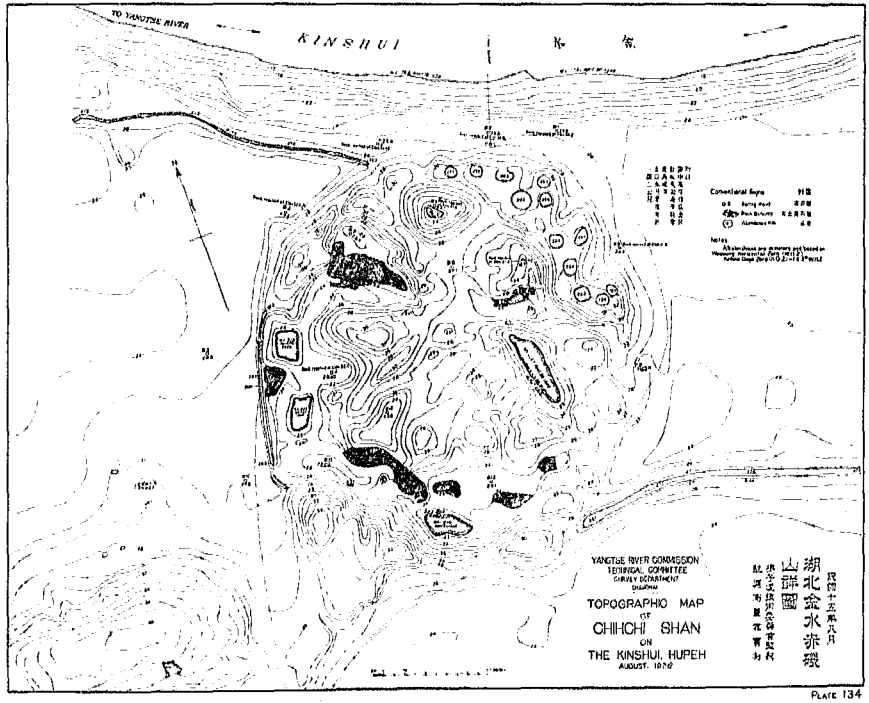

TOPOGRAPHIC MAP
OF
YUKWAN SHAN
IN
THE KINSHUI HSIEN
KINSHUI

PLATE 135


TO YANGTSE RIVER
KINSHUI
YANGTSE RIVER COMMISSION
TECHNICAL COMMITTEE
SURVEY DEPARTMENT
HANKOW
TOPOGRAPHIC MAP
OF
CHIHCHI SHAN
ON
THE KINSHUI, HUPEH
AUGUST, 1929
湖北金水北磯
山形圖
PLATE 134

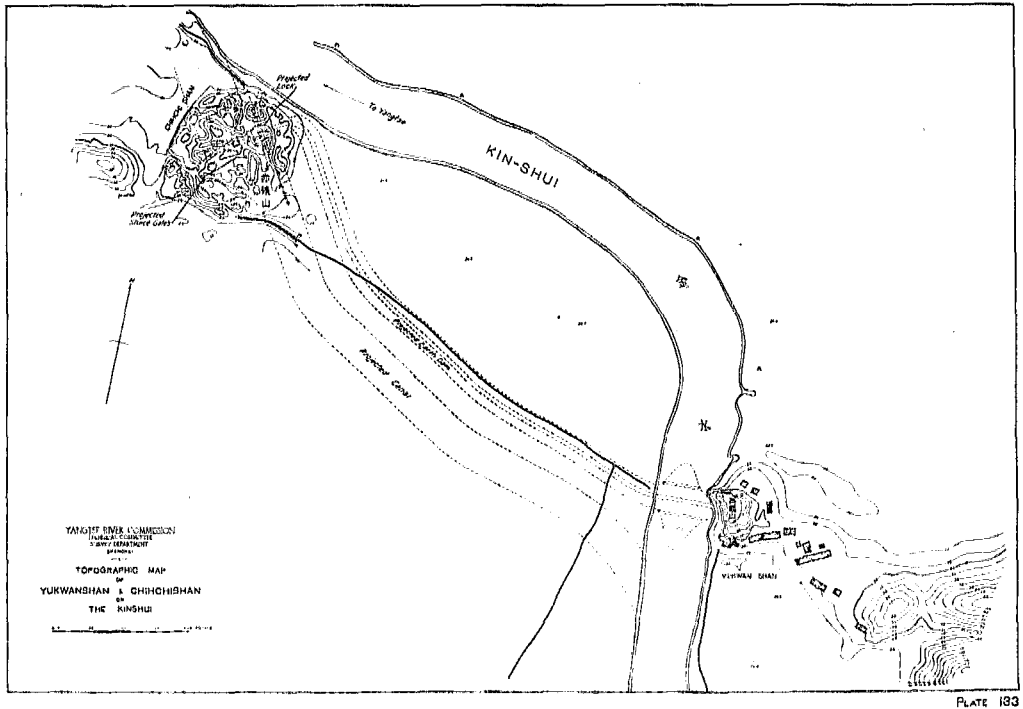
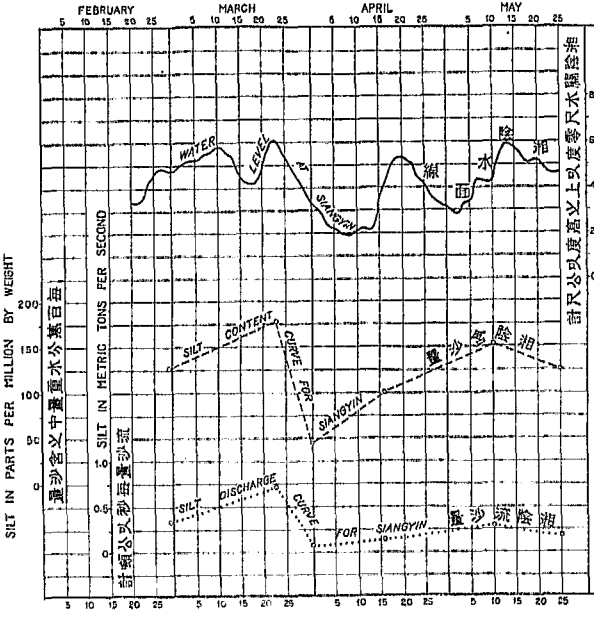

KIN-SHUI
Projected Locks
Concrete Gates
Projected Lower Gates
To Yangtze
Projected Canal
Projected Canal
YUKWANSHAN
YANGTZE RIVER COMMISSION
TOPOGRAPHIC MAP
OF
YUKWANSHAN & CHIHCHIBHAN
ON
THE KINSHUI

PLATE 133



民國十五年二月至五月

湘陰測站湘江沙量之變異圖

揚子江水利委員會監製

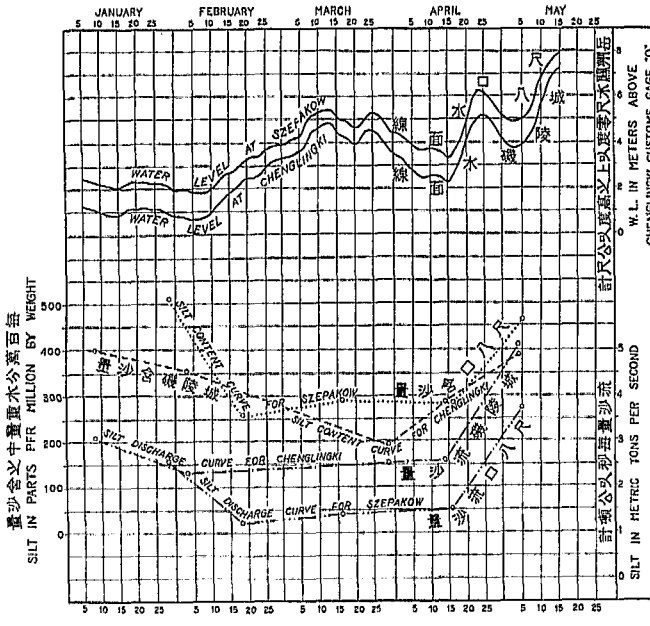
技術委員會測量課製

YANGTSE RIVER COMMISSION
TECHNICAL COMMITTEE
SURVEY DEPARTMENT
SHANGHAI

VARIATION OF SILT CONTENT
IN SIANG RIVER
AT SIANGYIN DAGING STATION
FOR 1925

G. G. Ende
Hy Survey Engineer

PLATE 132



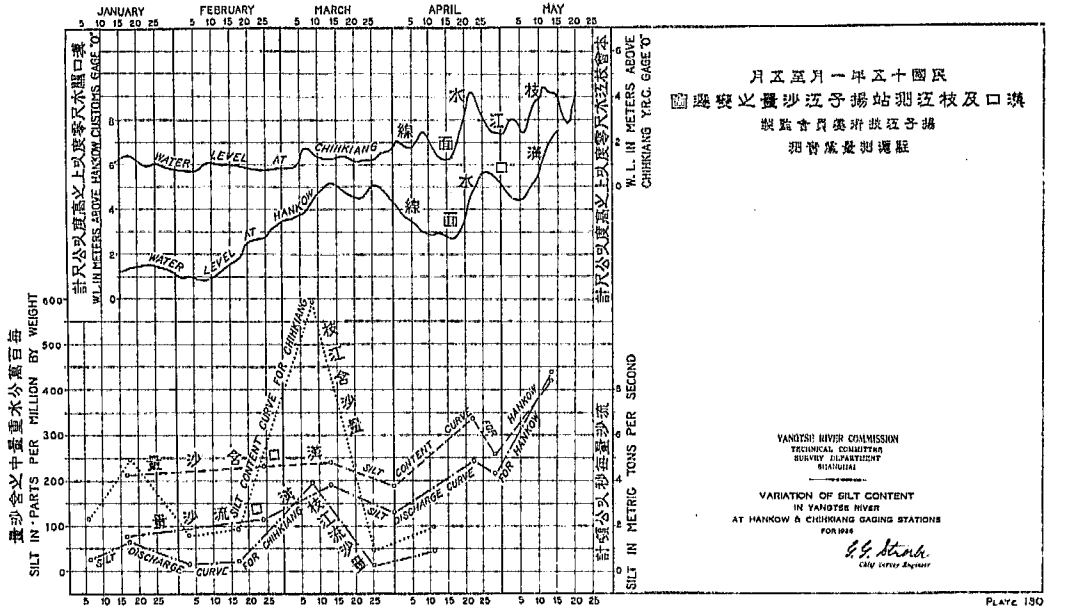
民國十五年一月至五月
城陵磯及八口測站揚子江
沙量之變遷圖
揚子江水利委員會監製
測量期間之水位

YANGTSE RIVER COMMISSION
TECHNICAL COMMITTEE
SURVEY DEPARTMENT
HANKOW

VARIATION OF SILT CONTENT
IN YANGTSE RIVER
AT CHENGLINGKI & SZEPAKOW GAGING STATIONS
FOR 1926

G.G. Stark
Chief Survey Engineer

PLATE 131



民國十五年一月至五月

漢口及枝江測站揚子江沙量之變遷

揚子江水利委員會監製

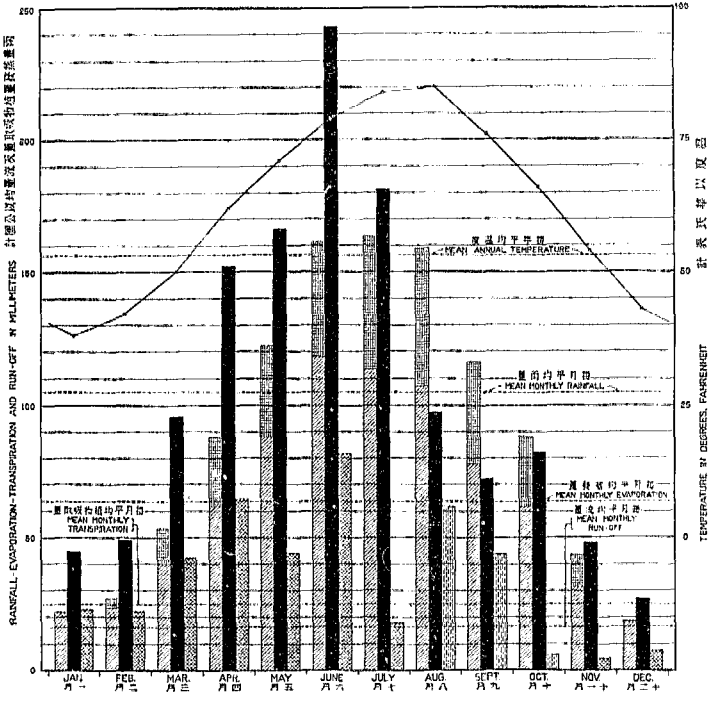
揚會量測量流江揚

YANGTSE RIVER COMMISSION
TECHNICAL COMMITTEE
SURVEY DEPARTMENT
SHANGHAI

VARIATION OF SILT CONTENT
IN YANGTSE RIVER
AT HANKOW & CHIHKIANG GAGING STATIONS
FOR 1926

G. G. Stark
Chief Survey Engineer

PLATE 190



圖量流及象撫之域流水金

黑公方平百五萬積面水湖
黑公方平十五零千二積積面地陸
黑公方平十五百五千二積積面總域流
積積面口臨湖錢流予揚
測實象氣測流逕

These diagrams are based on data obtained from the following sources:

Rainfall from Hankow Customs records covering a period of 45 years, 1890 1915 (except year 1934)

Temperature from records taken for a period of 10 years 1910-25 at Griffith John College near Hankow

Evaporation and Transpiration from figures computed from observed data.

Run-off = Rainfall minus Evaporation and Transpiration

雨量以平月拍 | 攝測實
氣溫以平月拍
蒸發逕之面水及地陸月拍 | 算計經
蒸騰以時錢月拍
量流之域流月拍

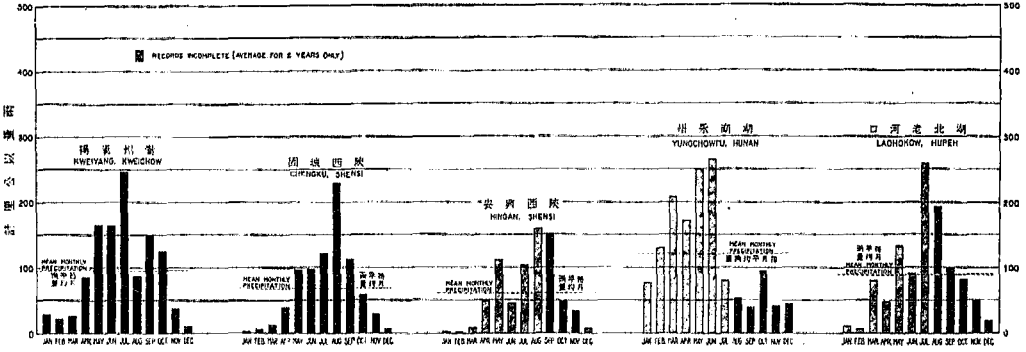
AVERAGE MONTHLY TEMPERATURE
RAINFALL } OBSERVED
MONTHLY EVAPORATION (LAND AND WATER)
TRANSPIRATION
RUN-OFF OR DISCHARGE } CALCULATED
MONTHLY EVAPORATION AND TRANSPIRATION IN EXCESS OF RAINFALL (NEGATIVE RUN-OFF)

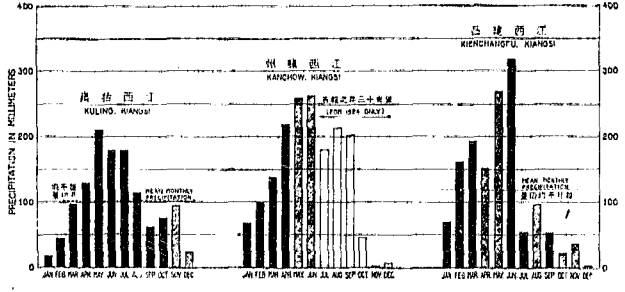
YANGTSE RIVER COMMISSION
TECHNICAL COMMITTEE
SURVEY HANKOW
SECTION

METEOROLOGICAL DATA & COMPUTED RUN-OFF
KINSHUI BASIN

LAKE AREA 500 SQ KMS
LAND AREA 2050 SQ KMS } 2550 SQ KMS
(FROM MAGGIE MAPS)

PLATE 129



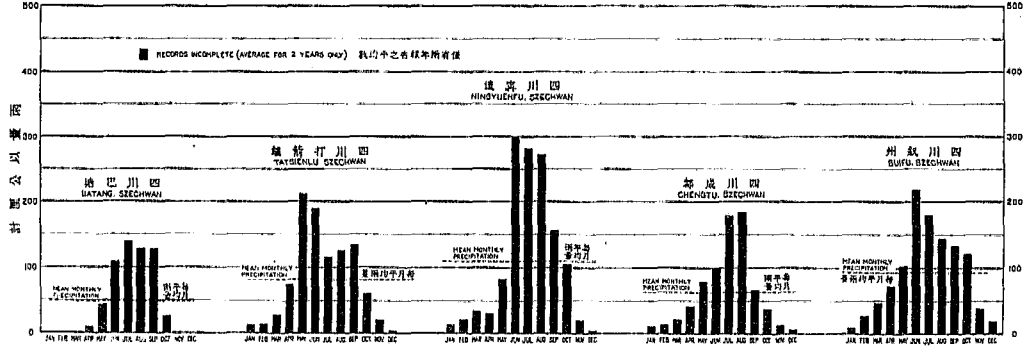


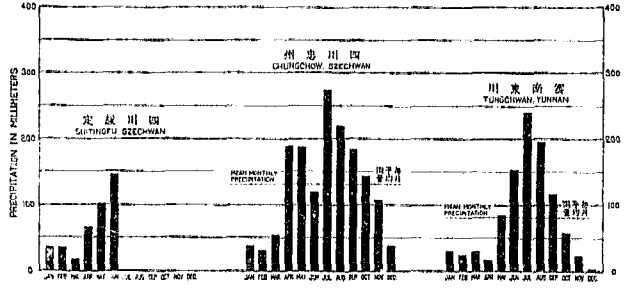
YANGTSE RIVER COMMISSION
TECHNICAL COMMITTEE
SURVEY DEPARTMENT

DIAGRAM OF MONTHLY RAINFALL
ON THE YANGTSE BASIN
AT VARIOUS STATIONS
AVERAGE FOR 1912-48

民國十三年至十八年揚子江流域各測站月平均雨量圖

PLATE 128



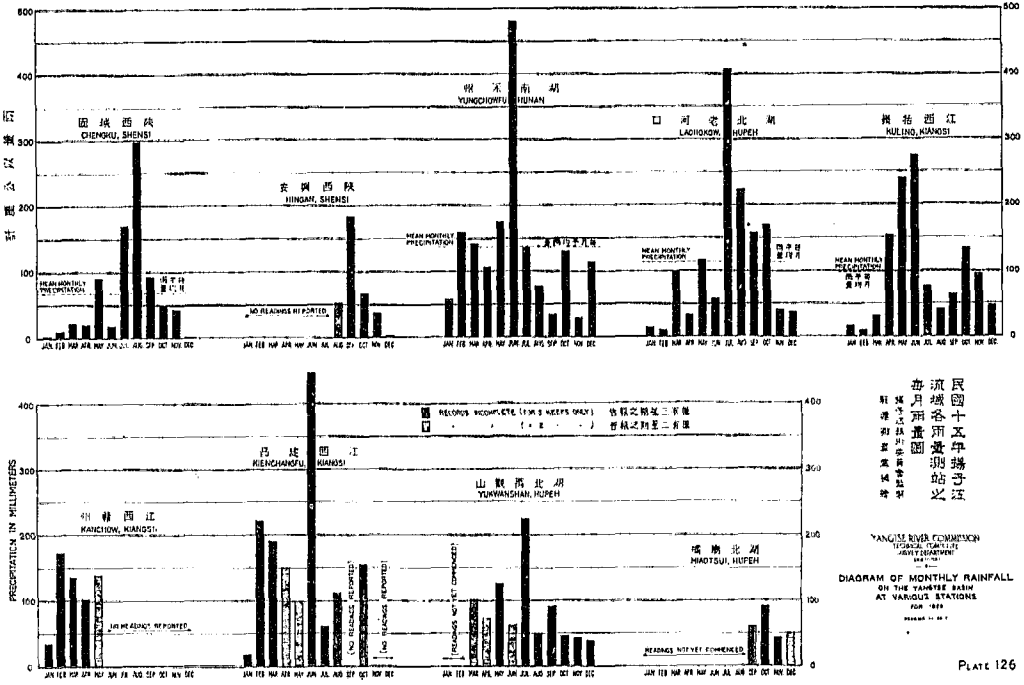


YANGTSE RIVER COMMISSION
TECHNICAL COMMITTEE
FIRST INVESTIGATION
DIAGRAM OF MONTHLY RAINFALL
ON THE YANGTSE BASIN
AT VARIOUS STATIONS
AVERAGE FOR 1924-5

民國十三年至十五年揚子江流域各雨量測站之平均雨量圖

揚子江水利委員會技術委員會第一次調查測量

PLATE 127

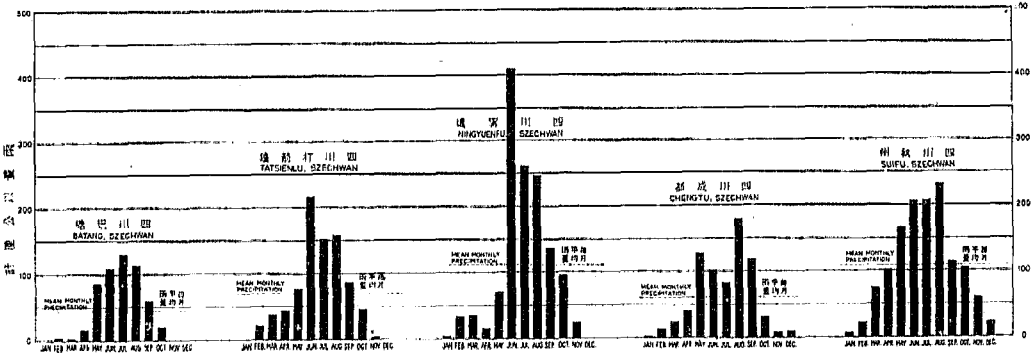


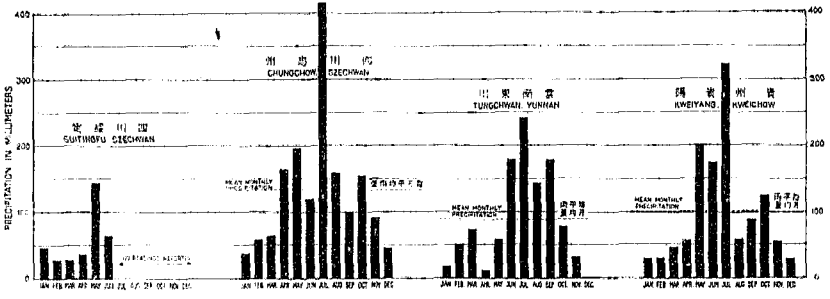
民國十五年揚子江流域各雨量測站之每月雨量圖

YANGTSE RIVER COMMISSION

DIAGRAM OF MONTHLY RAINFALL ON THE YANGTSE BASIN AT VARIOUS STATIONS FOR 1926

PLATE 126



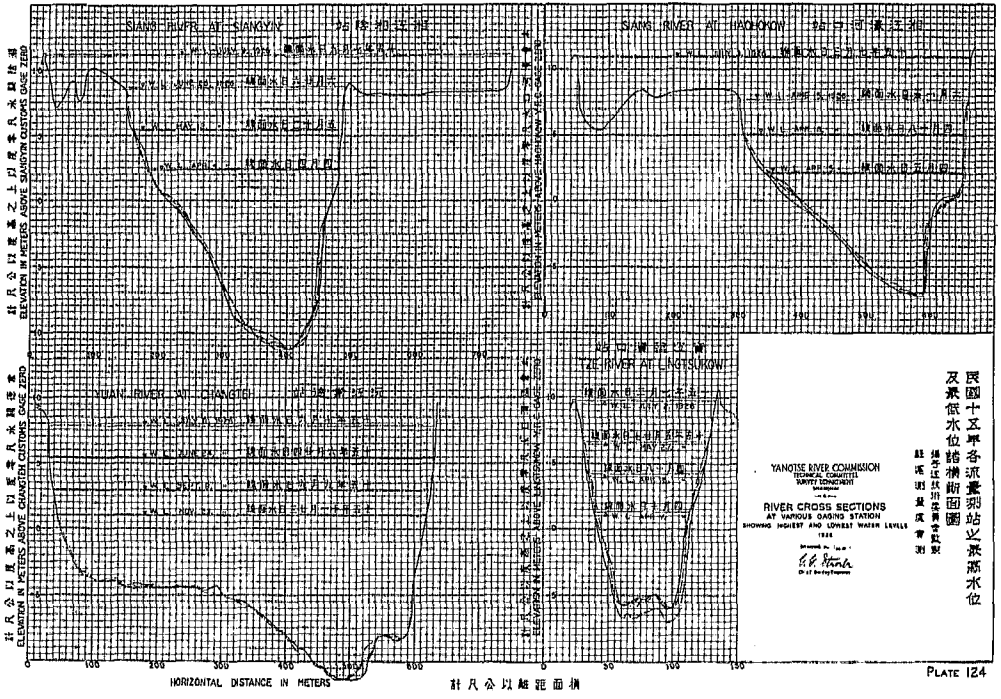


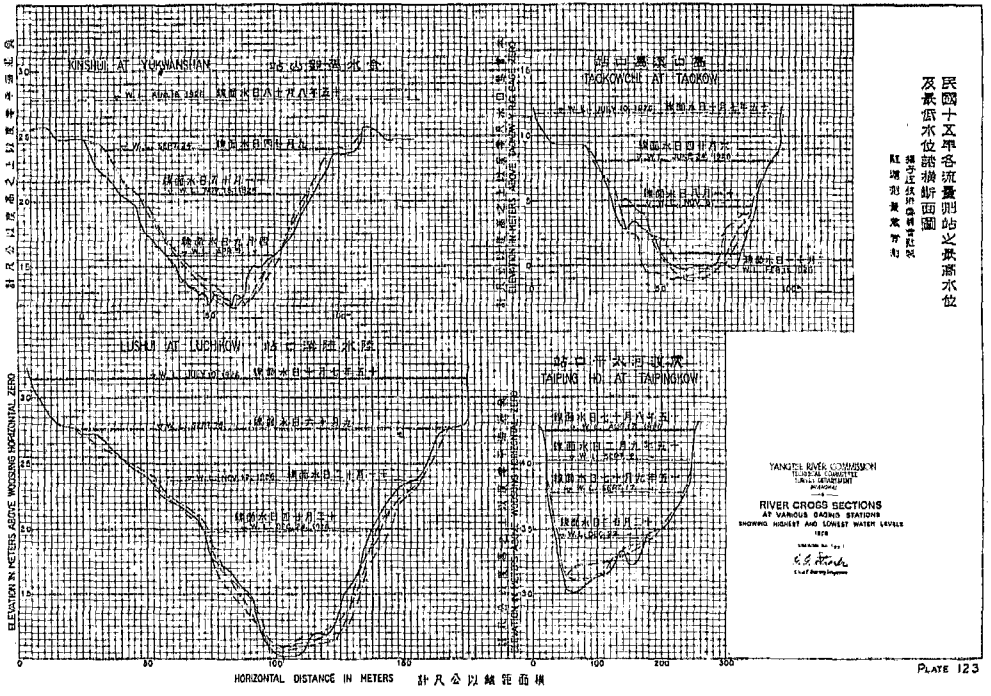
民國十五年揚子江流域各雨量測站之每月雨量圖

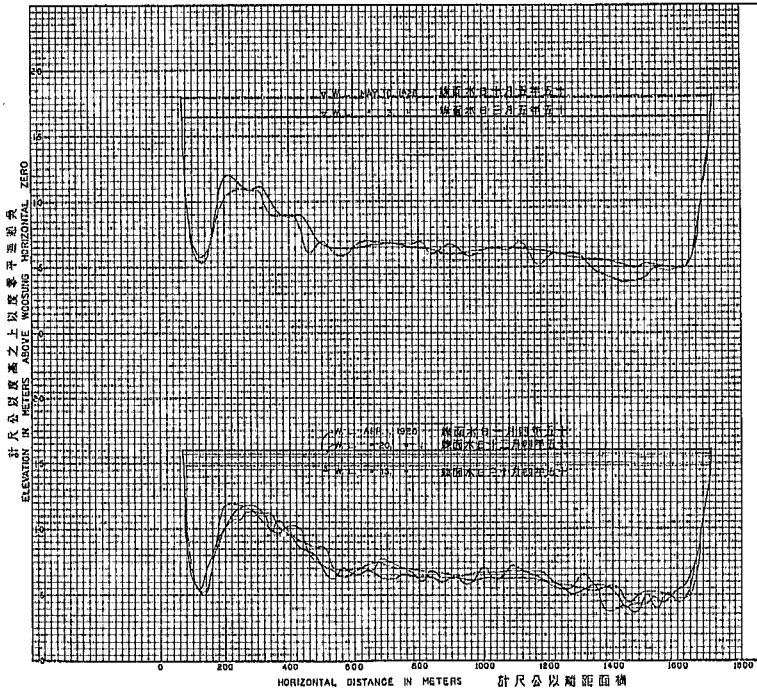
YANGTSE RIVER COMMISSION
TECHNICAL COMMITTEE
SURVEY DEPARTMENT

DIAGRAM OF MONTHLY RAINFALL
ON THE YANGTSE BASIN
AT VARIOUS STATIONS
FOR 1926

PLATE 125


SIANG RIVER AT SIANGYIN 湘江在湘陰
SIANG RIVER AT HSIHKOW 湘江在西口
YUAN RIVER AT CHANGTEH 沅江在常德
YUAN RIVER AT LINGSUKOW 沅江在凌宿口
ELEVATION IN METERS ABOVE SIANGYIN CUSTOMS GAGE ZERO
ELEVATION IN METERS ABOVE HSIHKOW CUSTOMS GAGE ZERO
ELEVATION IN METERS ABOVE CHANGTEH CUSTOMS GAGE ZERO
ELEVATION IN METERS ABOVE LINGSUKOW CUSTOMS GAGE ZERO
HORIZONTAL DISTANCE IN METERS
YANGTSE RIVER COMMISSION
TECHNICAL COMMITTEE
SURVEY DEPARTMENT
RIVER CROSS SECTIONS
AT VARIOUS GAGING STATION
SHOWING HIGHEST AND LOWEST WATER LEVELS
1928
Drawn by
Checked by
Chief of Survey Department
民國十五年各測量測站之最高水位
及最低水位諸橫斷面圖
PLATE 124


民國十五年各流量測站之最高水位
及最低水位諸橫斷面圖
YANGTSE RIVER COMMISSION
RIVER CROSS SECTIONS
AT VARIOUS GAGING STATIONS
SHOWING HIGHEST AND LOWEST WATER LEVELS
1926
ELEVATION IN METERS ABOVE WOOSUNG HORIZONTAL ZERO
HORIZONTAL DISTANCE IN METERS
PLATE 123



民國十五年四月及五月漢口揚子江之斷面圖

揚子江水利委員會製

YANGTSE RIVER COMMISSION
TECHNICAL COMMITTEE
SURVEY DEPARTMENT

CROSS SECTIONS Hc
OF YANGTSE RIVER
AT HANKOW CROSSING
FOR
APRIL & MAY, 1925

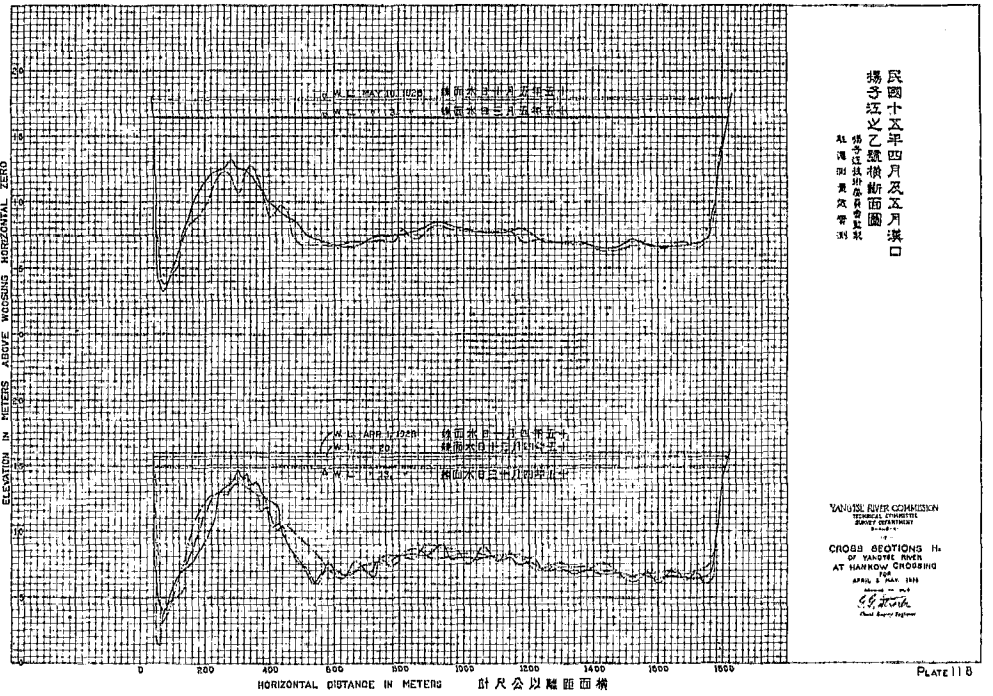
PLATE 122

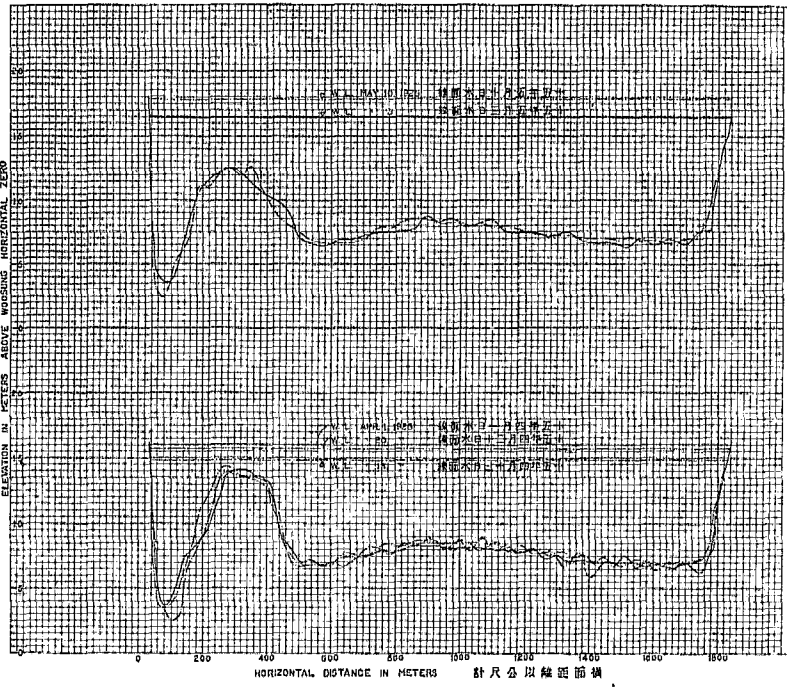
揚子江三峽萬縣附近橫斷面圖
民國十五年四月民生公司測繪
YANGTZE RIVER CANYON
TYPICAL CONCRETE
CROSS SECTIONS Hr
OF YANGTZE RIVER
AT WANHSIEN CHUNGKING
PLATE 121
HORIZONTAL DISTANCE IN METERS 計尺公以程距面橫
ELEVATION IN METERS ABOVE WOOSUNG HORIZONTAL ZERO
計尺公以度高基之上以吳淞平海測為

揚民國十五年
子江水利委員會
揚子江水利委員會測量隊
揚子江水利委員會印製
YANGTZE RIVER CONSERVANCY
CROSS SECTIONS H1
AT YANGTZE RIVER
HORIZONTAL DISTANCE IN METERS
ELEVATION IN METERS ABOVE WOOSUNG HORIZONTAL ZERO
PLATE 120

CROSS SECTIONS H2
OF YANGTSE RIVER
AT HANKOW CROSSING
HORIZONTAL DISTANCE IN METERS
ELEVATION IN METERS ABOVE WOOSUNG HORIZONTAL ZERO
0
200
400
600
800
1000
1200
1400
1600
1800
10
20
30
40
50

PLATE 119


民國十五年四月及五月漢口
揚子江之乙號橫斷面圖
揚子江技術委員會測繪
YANGTSE RIVER COMMISSION
TECHNICAL ETHNISTEL
SURVEY DEPARTMENT
CROSS SECTIONS No
OF YANGTSE RIVER
AT HANKOW CROSSING
FOR
APRIL & MAY 1926
ELEVATION IN METERS ABOVE WUSUNG HORIZONTAL ZERO
HORIZONTAL DISTANCE IN METERS
PLATE 118



民國十五年四月及五月漢口
揚子江之甲號橫斷面圖

揚子江水利委員會製圖股
駐漢測量隊繪制

YANGTZE RIVER COMMISSION
TYPICAL CONCRETE
DRAFT DEPARTMENT

CROSS SECTIONS No. 1
OF YANGTZE RIVER
AT HANKOW CROSSING
FOR
APRIL & MAY 1918

C. H. Smith
Chief Draftsman

PLATE 117

揚子江十字口渡江橋橋位斷面圖

CROSS SECTIONS IN YANGTZE CROSSING AT HANKOW CROSSING

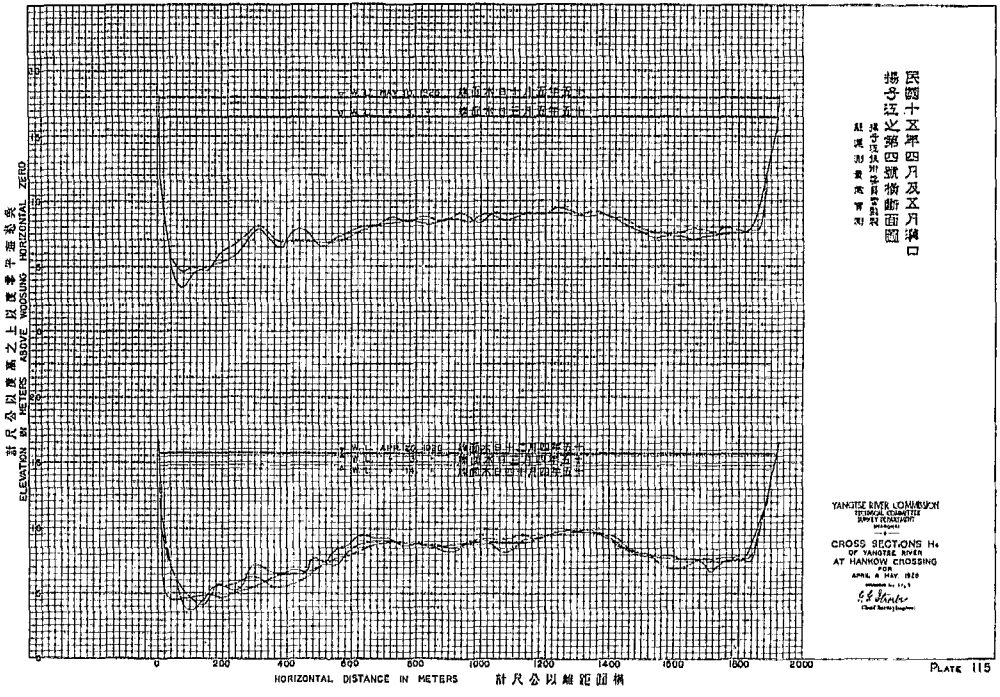
YANGTZE RIVER COMMISSION
TECHNICAL COMMITTEE
PROJECT

APRIL 8 MAY, 1929

PLATE 116

HORIZONTAL DISTANCE IN METERS 計尺公以離距面橫

ELEVATION IN METERS ABOVE WOOSUNG HORIZONTAL ZERO 計尺公以面平淞吳與高



民國十五年四月及五月漢口揚子江之第四號橫斷面圖

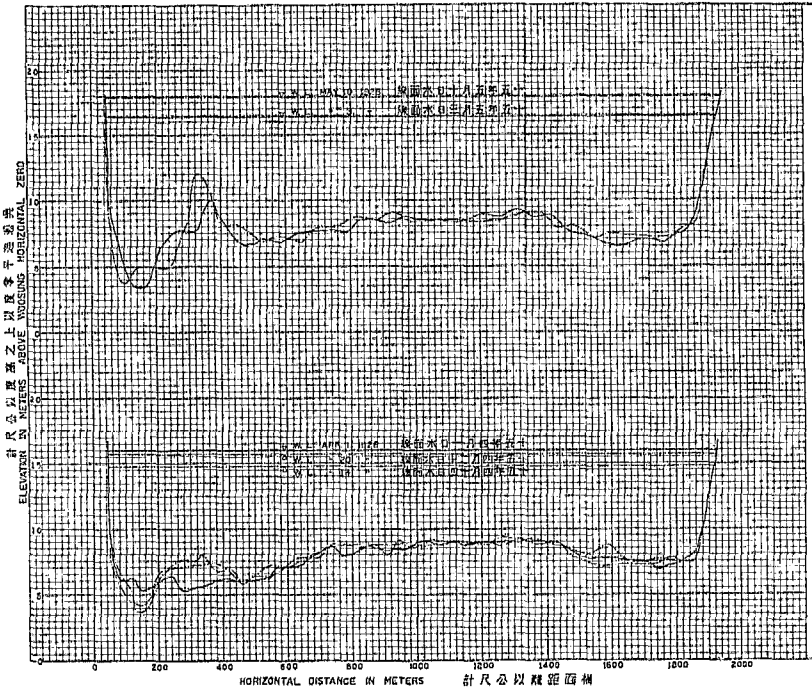
揚子江水利委員會
技術委員會
測量隊

YANGTSE RIVER COMMISSION
TECHNICAL COMMITTEE
SURVEY DETACHMENT

CROSS SECTIONS H4
OF YANGTSE RIVER
AT HANKOW CROSSING
FOR
APRIL & MAY 1926

C. E. Stanley
Chief Survey Engineer

PLATE 115



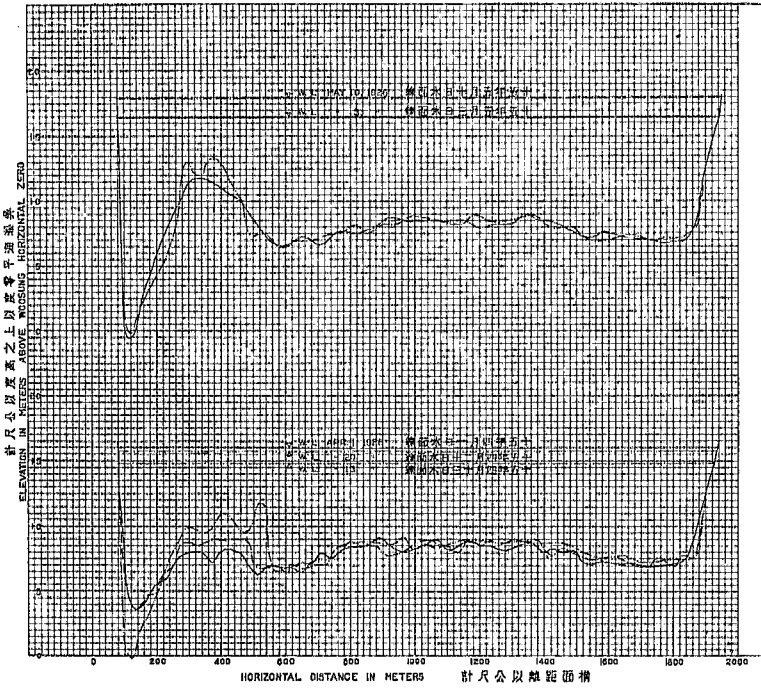
民國十五年四月及五月漢口
揚子江水道第三號橫斷面圖

YANGTSE RIVER COMMISSION
ECONOMIC COMMITTEE
SURVEY DEPARTMENT

CROSS SECTIONS No 3
OF YANGTSE RIVER
AT HANKOW CROSSING
FOR
APRIL & MAY, 1926

Chief Party Engineer

PLATE 114



民國十又五年四月及五月漢口揚子江之第二號測斷面圖

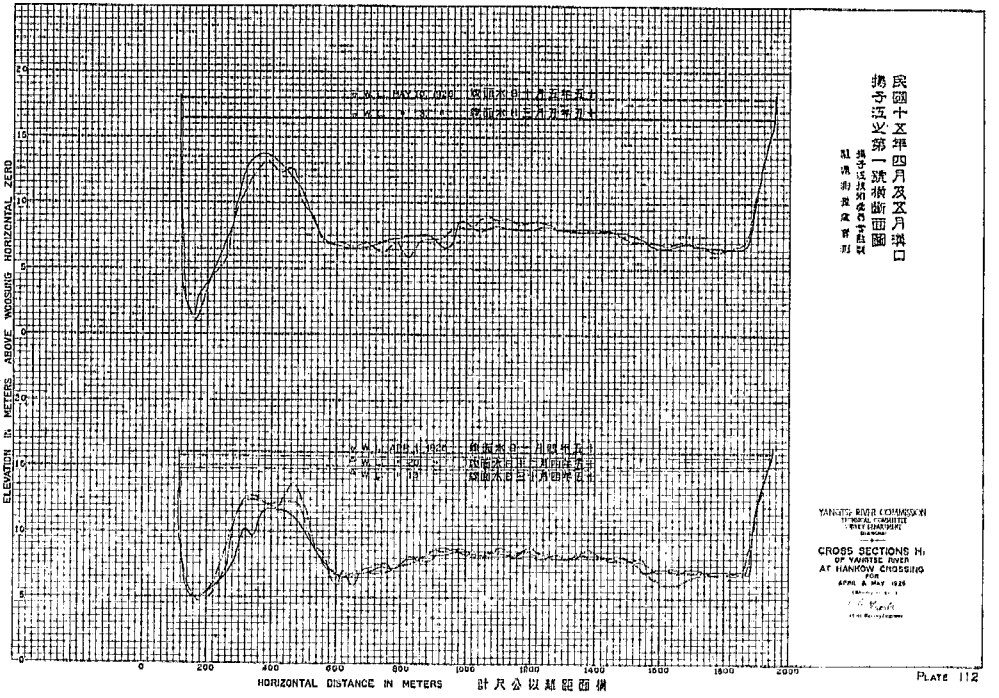
揚子江技術委員會測量隊
測量主任

YANGTSE RIVER COMMISSION
TECHNICAL COMMITTEE
SURVEY DEPARTMENT

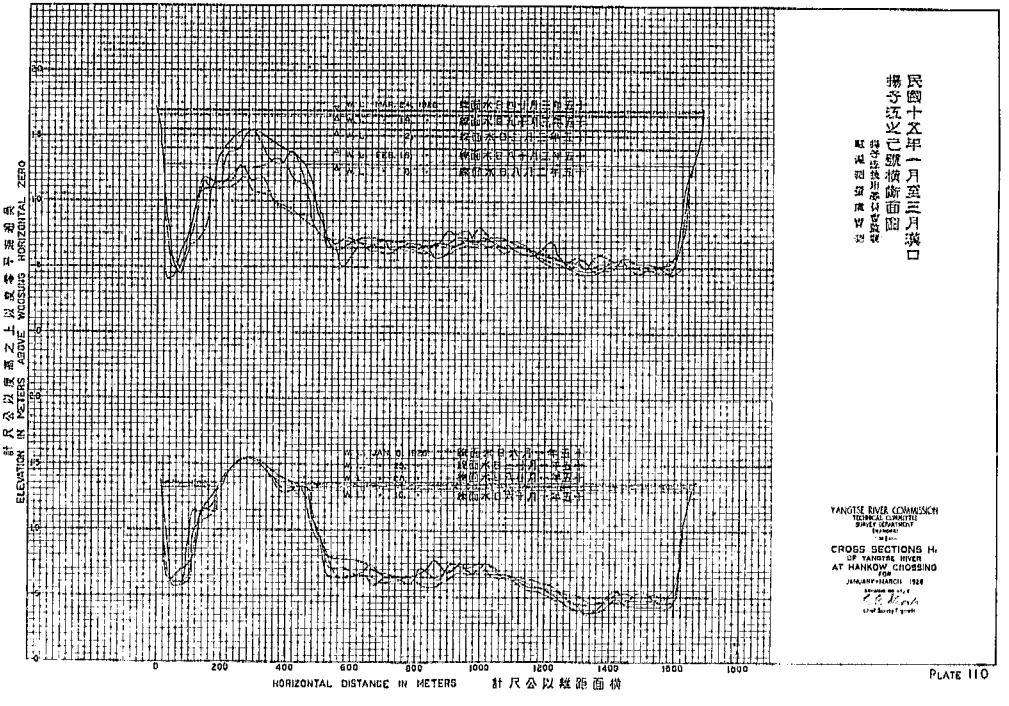
CROSS SECTIONS No 2
OF YANGTSE RIVER
AT HANKOW CROSSING
FOR
APRIL & MAY 1936

Chief Surveyor-in-charge

PLATE 113


民國十五年四月及五月漢口揚子江之第一號橫斷面圖
揚子江技術委員會製
YANGTZE RIVER COMMISSION
TECHNICAL COMMITTEE
CROSS SECTIONS No 1
OF YANGTZE RIVER
AT HANKOW CROSSING
FOR
APRIL & MAY 1926
ELEVATION IN METERS ABOVE WOOSUNG HORIZONTAL ZERO
計尺公以度西之上以度零平淞吳係
HORIZONTAL DISTANCE IN METERS
橫面距離以公尺計
PLATE 112

漢水過江橫斷面圖
CROSS SECTIONS IN
AT HANKOW CROSSING
ELEVATION IN METERS ABOVE WOOSUNG HORIZONTAL ZERO
HORIZONTAL DISTANCE IN METERS
PLATE III


ELEVATION IN METERS ABOVE WOOSUNG HORIZONTAL ZERO
計尺公以度高之上以淞吳平淵如表
HORIZONTAL DISTANCE IN METERS
計尺公以離距面橫
0
200
400
600
800
1000
1200
1400
1600
1800
YANGTSE RIVER COMMISSION
TECHNICAL COMMITTEE
SURVEY DEPARTMENT
CROSS SECTIONS H
OF YANGTSE RIVER
AT HANKOW CROSSING
FOR
JANUARY-MARCH 1926
揚子江之已測橫斷面圖
民國十五年一月至三月漢口
PLATE 110

民國十六年一月實測吳淞口
江水標高斷面圖
CROSS SECTIONS H4
AT HANKOW CROSSING
JANUARY 1928
HORIZONTAL DISTANCE IN METERS
ELEVATION IN METERS ABOVE WOOSUNG HORIZONTAL ZERO
PLATE 109

揚子江漢口至九江段水面比降圖
CROSS SECTIONS OF YANGTZE RIVER AT HANKOW CHIUKIANG
JANUARY MARCH 1931
YANGTZE RIVER COMMISSION
ELEVATION IN METERS ABOVE WOOSUNG HORIZONTAL ZERO
HORIZONTAL DISTANCE IN METERS
計尺公里以基點爲準
PLATE 108

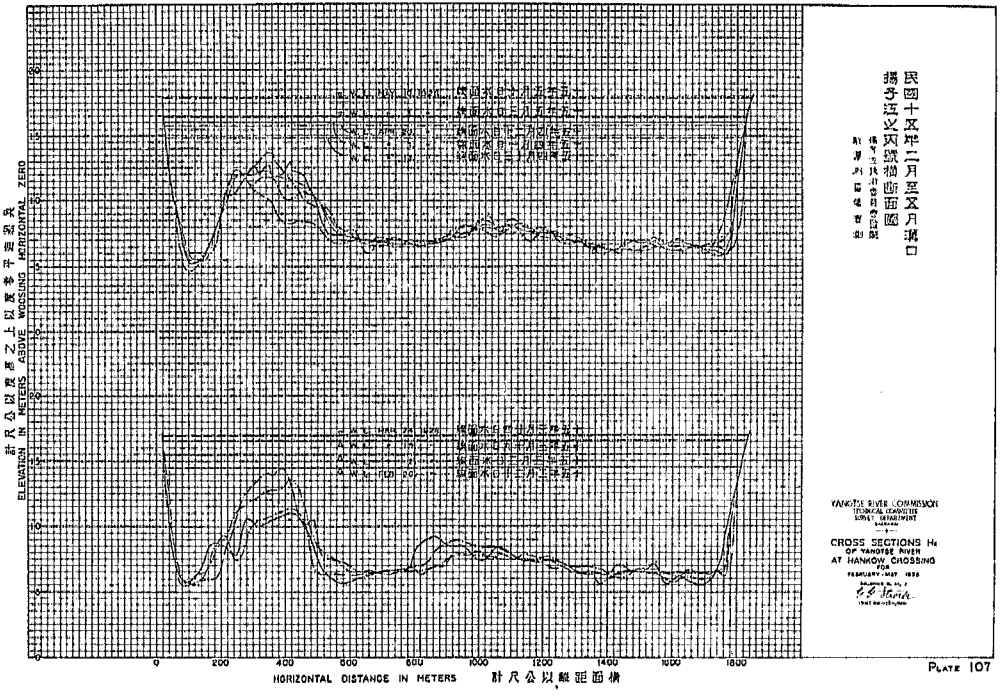
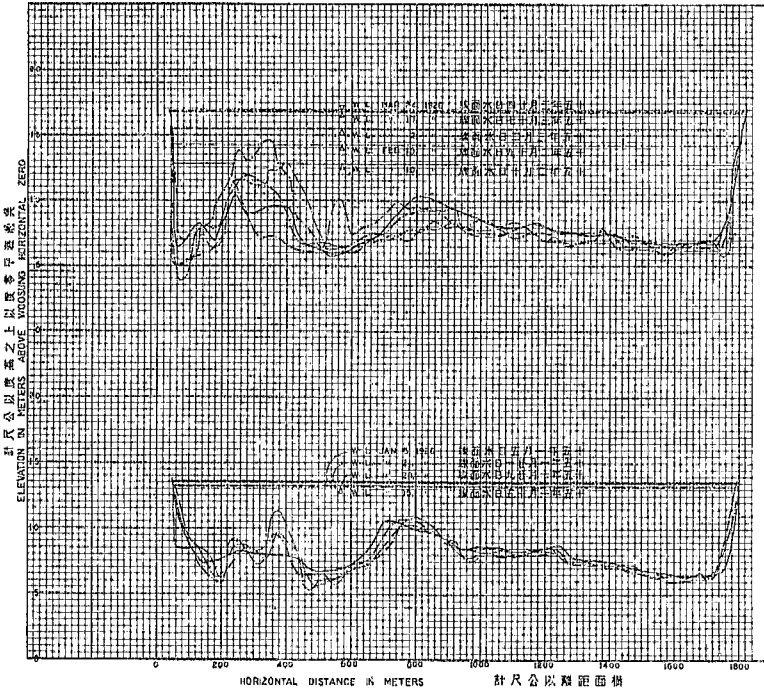

民國十五年二月至五月漢口
揚子江水因測橫斷面圖
揚子江水利委員會製
YANGTZE RIVER COMMISSION
TECHNICAL COMMITTEE
SURVEY DEPARTMENT
CROSS SECTIONS Hx
OF YANGTZE RIVER
AT HANKOW CROSSING
FEBRUARY - MAY 1926
計尺公以度基之上以高參平海弘吳
ELEVATION IN METERS ABOVE WOOSUNG HORIZONTAL ZERO
0
200
400
600
800
1000
1200
1400
1600
1800
HORIZONTAL DISTANCE IN METERS
橫面距離以公尺計

PLATE 107



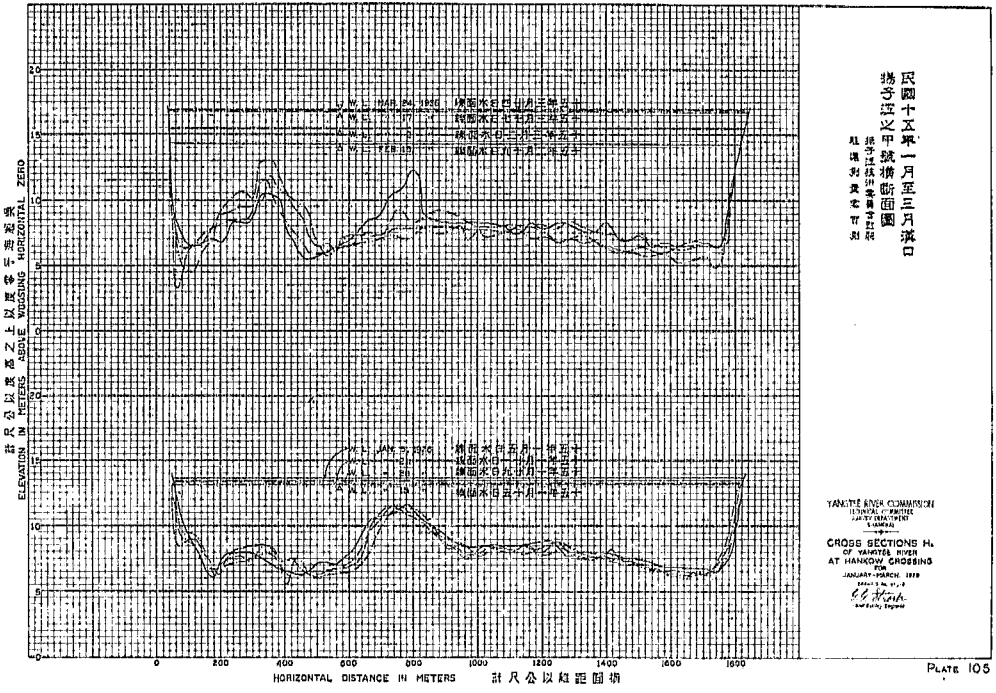
民國十五年一月至三月漢口
揚子江之橫斷面圖

揚子江技術委員會製
起點對吳淞零點以上

VANGTSE RIVER CONMISSION
TECHNICAL COMMITTEE
SURVEY DEPARTMENT

CROSS SECTIONS H₉
OF YANGTSE RIVER
AT HANKOW CROSSING
FOR
JANUARY - MARCH 1926

PLATE 106



民國十五年一月至三月漢口
揚子江水平斷橫面圖

揚子江水利委員會
測量隊製

YANGTZE RIVER COMMISSION
TECHNICAL COMMITTEE
SURVEY DEPARTMENT
S. HSIUNG
Engineer

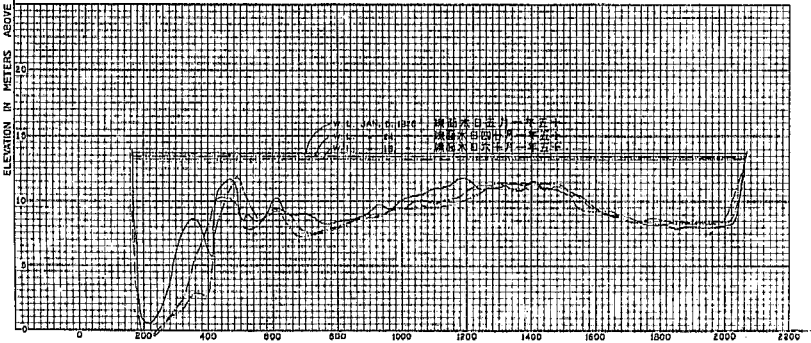
CROSS SECTIONS H.
OF YANGTZE RIVER
AT HANKOW CROSSING
FOR
JANUARY-MARCH, 1926
SURVEY S. No. 1-3

G. G. Hsieh
Surveying Engineer

PLATE 105

民國十五年一月漢口揚子江
乂部六號橫斷面圖

揚子江技術委員會製圖
漢口江漢關工程處製圖

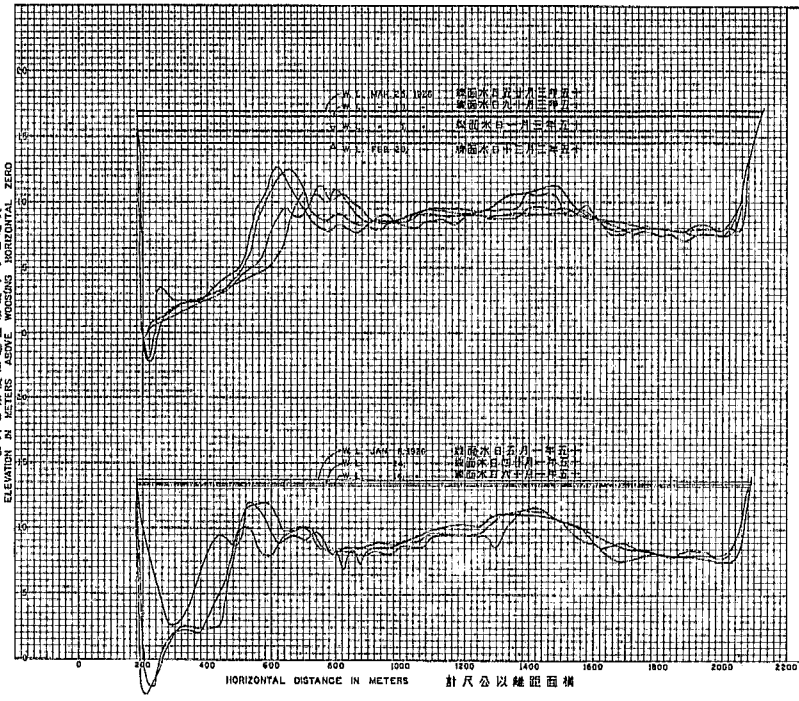


YANGTSE RIVER COMMISSION
TECHNICAL COMMITTEE
RIVER DEPARTMENT
SHANGHAI

CROSS SECTIONS No
OF YANGTSE RIVER
AT HANKOW CROSSING
FOR
JANUARY, 1926
Datum as City

H.G. Stevens
Chief Surveying Engineer

PLATE 104



民國十五年一月至三月漢口揚子江之第五號橫斷面圖

揚子江技術委員會
測量股繪製

YANGTSE RIVER CONMISSION
TECHNICAL COMMITTEE
SURVEY DEPARTMENT
HANKOW

CROSS SECTIONS H_5
OF YANGTSE RIVER
AT HANKOW CROSSING
FOR
JANUARY - MARCH, 1926

Chief Survey Engineer

PLATE 103

橫斷面十五號
過河線路橫斷面圖
CROSS SECTION 14
AT HANKOW CROSSING
YANGTZE RIVER COMMISSION
PLATE 102
HORIZONTAL DISTANCE IN METERS
ELEVATION IN METERS ABOVE WOOSUNG HORIZONTAL ZERO

揚子江之第三號橋墩斷面圖

CROSS SECTIONS No 3 OF YANGTSE RIVER AT HANKOW CROSSING

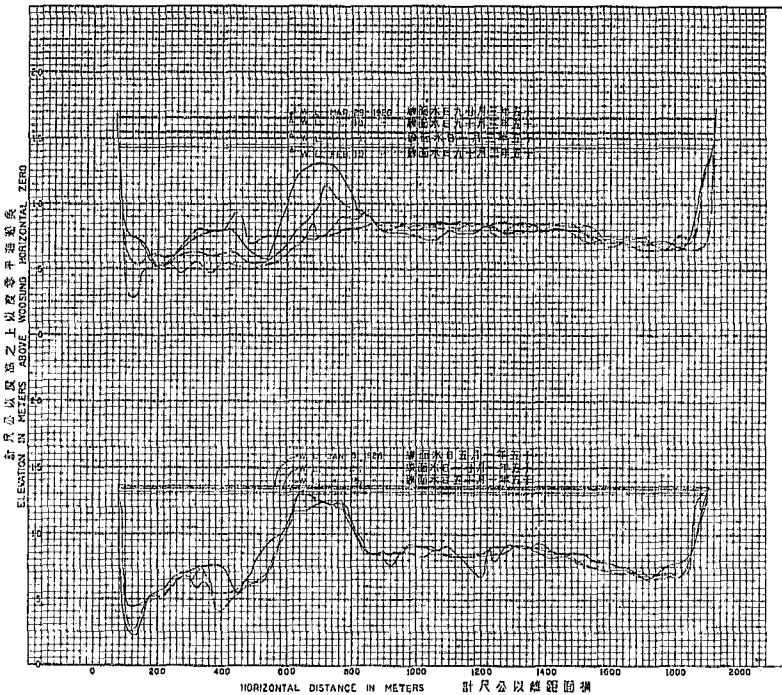
YANGTSE RIVER COMMISSION UNIT STANDARD

PLATE 101

ELEVATION IN METERS ABOVE WOOSUNG HORIZONTAL ZERO

HORIZONTAL DISTANCE IN METERS

計尺公以線距面橫



民國十五年一月至三月漢口
揚子江水道工程局測量隊
揚子江水利委員會存記

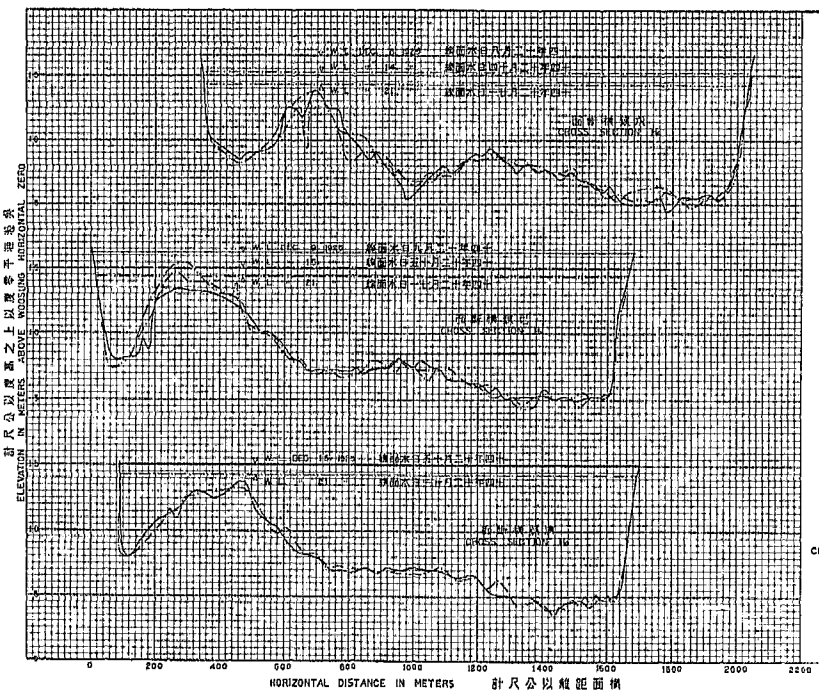
YANGTZE RIVER COMMISSION
TECHNICAL COMMITTEE
SURVEY EXHIBIT

CROSS SECTIONS H1
OF YANGTZE RIVER
AT HANKOW CROSSING
FOR
JANUARY-MARCH, 1926

PLATE 100

揚子江水利委員會
YANGTZE RIVER COMMISSION
CROSS SECTIONS H
AT HANKOW CROSSING
January-March, 1949
HORIZONTAL DISTANCE IN METERS
ELEVATION IN METERS ABOVE WOOSUNG HORIZONTAL ZERO

PLATE 99



民國十四年十一月漢口攝志江

改號已號及號號橫斷面圖

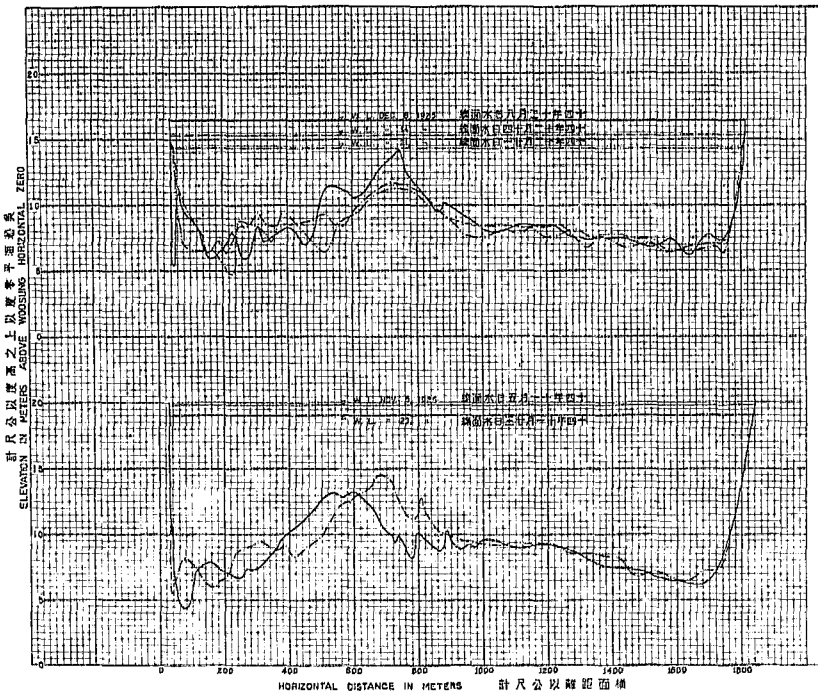
揚子江水利委員會製

YANGTZE RIVER COMMISSION
TECHNICAL COMMITTEE
CIVIL DEPARTMENT

CROSS SECTIONS H_2 H_3 & H_4
OF YANGTZE RIVER
AT HANKOW CROSSING
DECEMBER 1924

PLATE 98

YANGTZE RIVER COMMISSION
CROSS SECTIONS Ib
AT HANKOW CROSSING
PLATE 97
ELEVATION IN METERS ABOVE WOOSUNG HORIZONTAL ZERO
HORIZONTAL DISTANCE IN METERS



民國十四年十一月及十二月漢口
揚子江之斷橫面圖

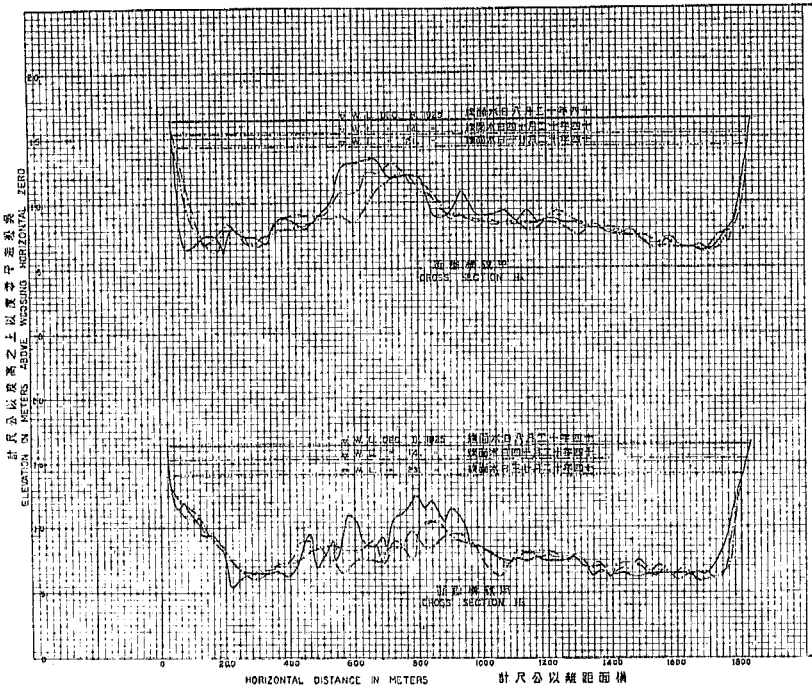
經理測量處製圖

YANGTZE RIVER COMMISSION
HYDRAULIC DIVISION
SURVEY DEPARTMENT

CROSS SECTIONS Ha
OF YANGTZE RIVER
AT HANKOW CROSSING
FOR
NOVEMBER & DECEMBER 1925

H. C. Hsieh
Chief Hydraulic Engineer

PLATE 96



計尺公以離距面橫

計尺公以度高之上以基零平出假

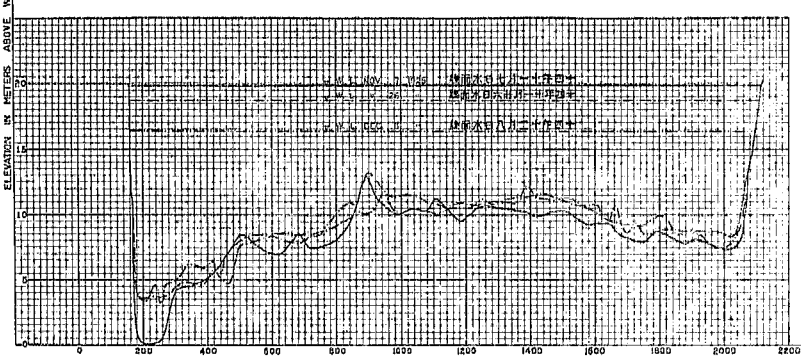
民國十四年十二月漢口揚子江
乂甲號及丙號橫斷面圖

TANGTSE RIVER COMMISSION
CROSS SECTIONS Ha & Hb
OF YANGTSE RIVER
AT HANKOW CROSSING
FOR
DECEMBER, 1925

PLATE 95

民國十四年十一月及十二月漢口
揚子江江義第六號橫斷面圖

揚子江水道委員會製
經緯測量隊實測



YANGTSE RAPIDS COMMISSION
CROSS SECTIONS No. OF YANGTSE RIVER AT HANKOW CROSSING
SURVEYED IN NOVEMBER & DECEMBER, 1914

PLATE 94

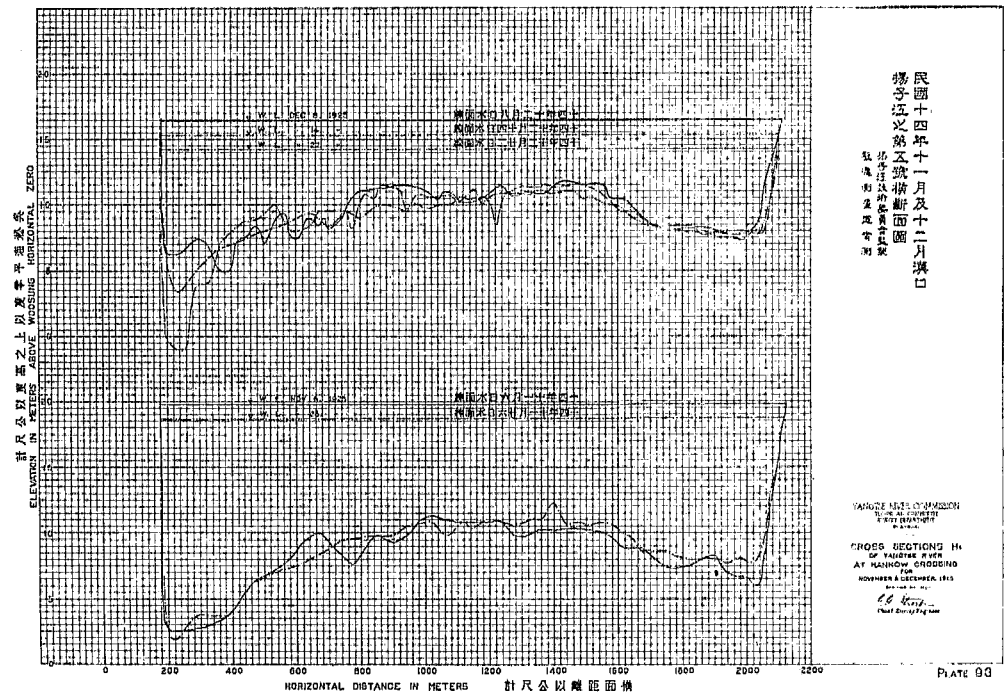

民國十四年十一月及十二月漢口
揚子江之第五號橫斷面圖
揚子江水利委員會製
製圖科量測實測
YANGTZE RIVER COMMISSION
TECHNICAL COMMITTEE
SURVEY DEPARTMENT
CROSS SECTIONS No. 5
OF YANGTSE RIVER
AT HANKOW CROSSING
FOR
NOVEMBER & DECEMBER, 1915
Chief Surveying Engineer
W.L. DEC. 8, 1915
W.L. DEC. 22
W.L. NOV. 14, 1915
W.L. DEC. 1
ELEVATION IN METERS ABOVE WOOSUNG HORIZONTAL ZERO
計尺公以算基之上以吳淞零平面為準
HORIZONTAL DISTANCE IN METERS
橫面距離以公尺計
0
200
400
600
800
1000
1200
1400
1600
1800
2000
2200

PLATE 93

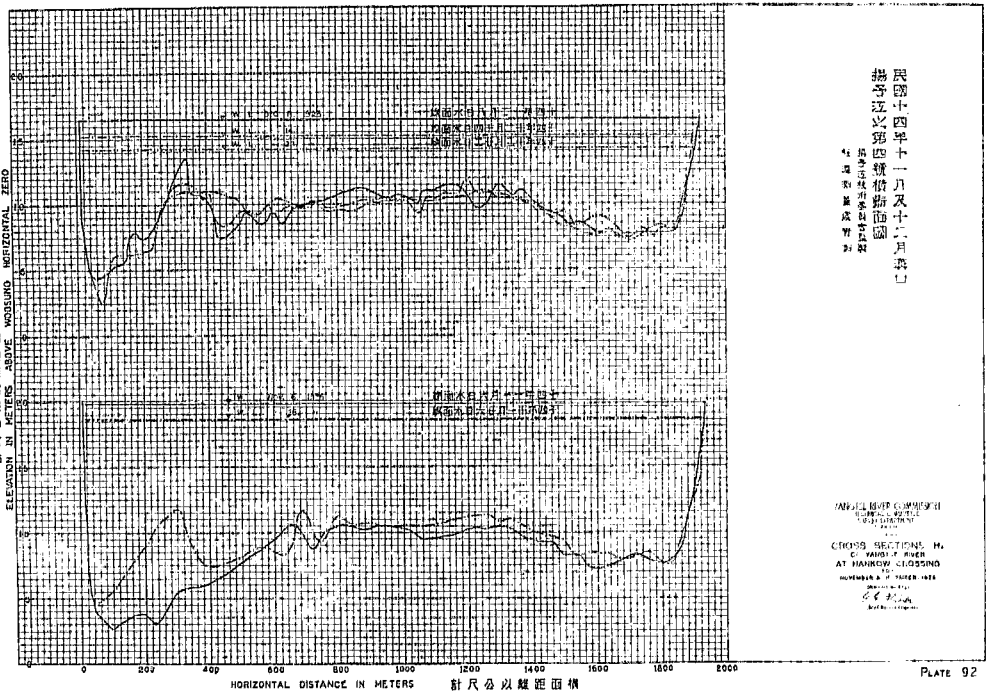
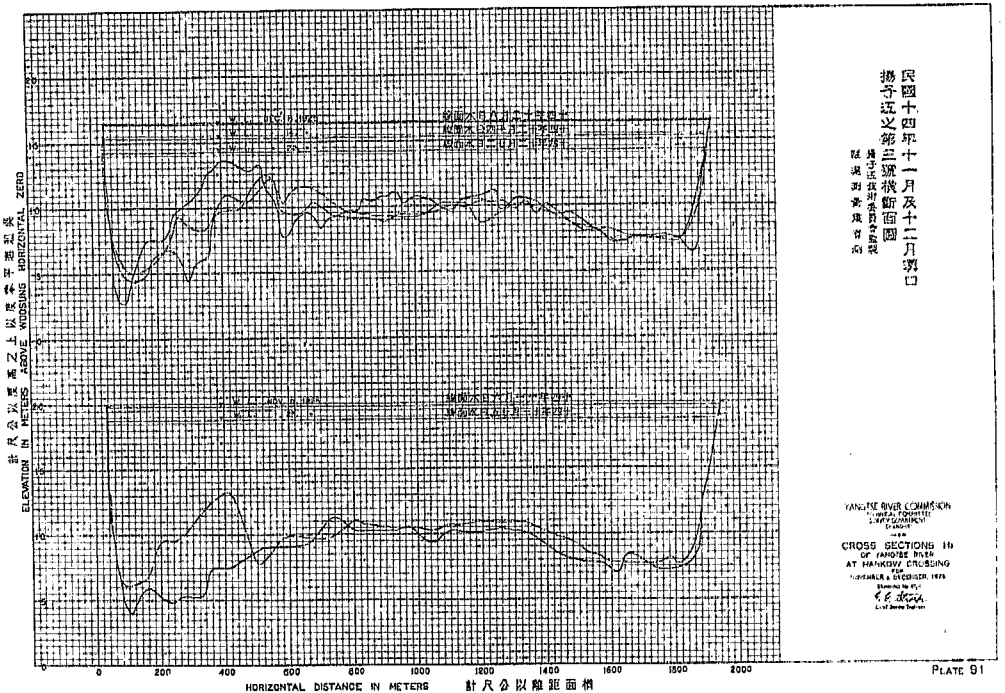

民國十四年十一月及十二月間揚子江岸線橫斷面圖
揚子江水利委員會
CROSS SECTIONS IN
OF YANGTZE RIVER
AT HANKOW CROSSING
NOVEMBER & DECEMBER 1925
計尺公以距高之上以震多平理海為
ELEVATION IN METERS ABOVE WOOSUNG HORIZONTAL ZERO
0
200
400
600
800
1000
1200
1400
1600
1800
2000
HORIZONTAL DISTANCE IN METERS
計尺公以離距面橫

PLATE 92


民國十四年十一月及十二月測
揚子江之第三號橫斷面圖
揚子江水利委員會製
民國十四年十一月
民國十四年十二月
ELEVATION IN METERS ABOVE WUSONG HORIZONTAL ZERO
計尺公以高之上以吳淞平面起
HORIZONTAL DISTANCE IN METERS
計尺公以離距面橫
YANGTSE RIVER COMMISSION
CROSS SECTIONS No. III
OF YANGTSE INLET
AT HANKOW CROSSING
NOVEMBER & DECEMBER, 1925
PLATE 91

CROSS SECTIONS IN CONNECTION WITH THE SURVEY FOR A TRAMWAY AT HANKOW CHOSHING
HORIZONTAL DISTANCE IN METERS
ELEVATION IN METERS ABOVE WOOSUNG HORIZONTAL ZERO

PLATE 80

揚子圖五十四第

經過漢陽鸚鵡洲及十二月港口

橫斷面圖

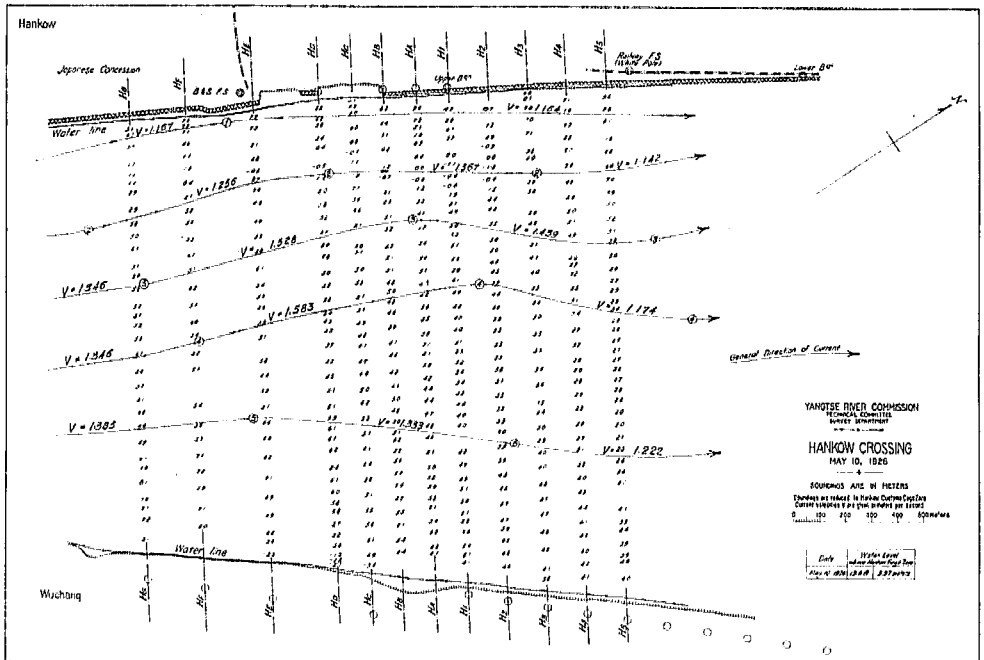

Hankow
Japanese Concession
Water line
Wuchang
General Direction of Current
YANGTSE RIVER COMMISSION
TECHNICAL COMMITTEE
SURVEY DEPARTMENT
HANKOW CROSSING
MAY 10, 1926
SOUNDINGS ARE IN METERS

PLATE 88

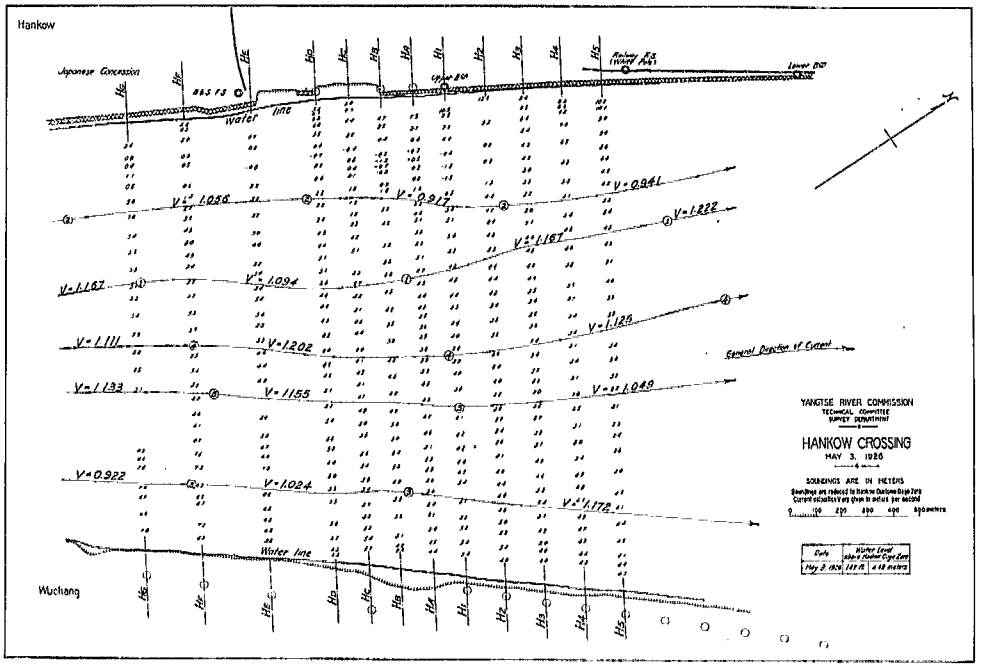

Hankow
Japanese Concession
885 FS
Water line
Lower Bar
Upper Bar
Railway (Wuhang R.R.)
V=1.056
V=0.917
V=0.941
V=1.222
V=1.167
V=1.167
V=1.094
V=1.126
V=1.111
V=1.202
Current Direction of Current
V=1.193
V=1.155
V=1.049
V=0.922
V=1.024
V=1.172
Water line
Wuchang
YANGTSE RIVER COMMISSION
TECHNICAL COMMITTEE
SURVEY DEPARTMENT
HANKOW CROSSING
MAY 3, 1926
SOUNDINGS ARE IN METERS
Soundings are reduced to Datum as Customs Gauge Zero
Current velocities are given in meters per second
0 100 200 300 400 500 meters
Date
Water Level above Hankow Customs Zero
May 3, 1926
117 ft.
+ 35.68 meters

PLATE 87

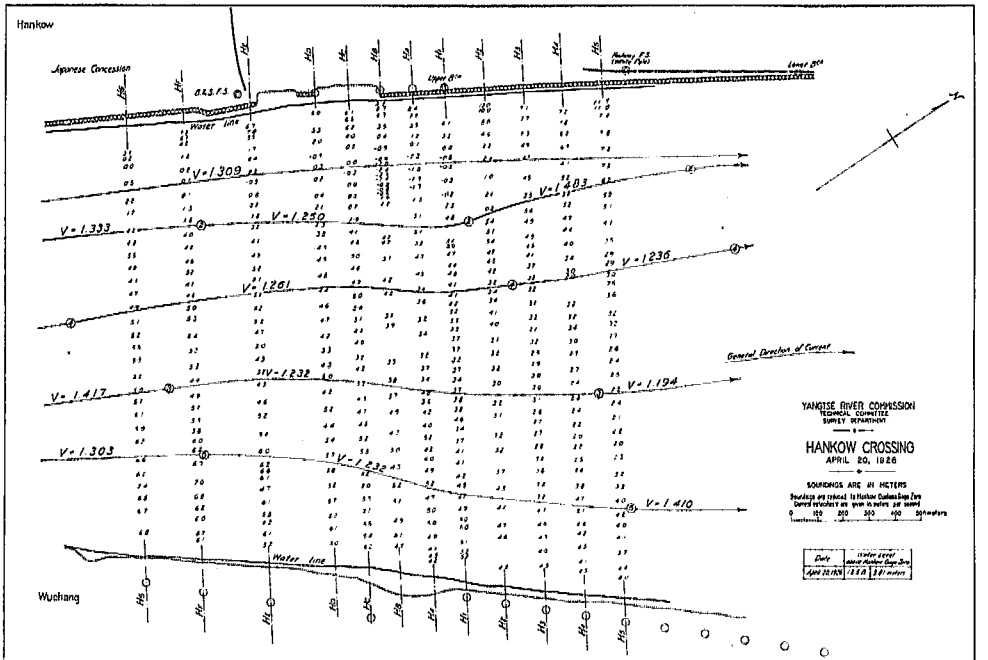

Hankow
Japanese Concession
B.S.F.S.
Water line
Upper Bund
Lower Bund
Hankow E.S. (empty flag)
V = 1.309
V = 1.250
V = 1.333
V = 1.403
V = 1.236
V = 1.261
V = 1.232
V = 1.417
V = 1.194
V = 1.303
V = 1.232
V = 1.410
General Direction of Current
Water line
Wuchang
YANGTSE RIVER COMMISSION
TECHNICAL COMMITTEE
SURVEY DEPARTMENT
HANKOW CROSSING
APRIL 20, 1926
SOUNDINGS ARE IN METERS
Soundings are reduced to Hankow Customs Gage Zero
Current velocities are given in meters per second
0 100 200 300 400 500 Meters
Date
Water stood above Hankow Gage Zero
April 20, 1926
12.8 m
39.1 meters

PLATE 86

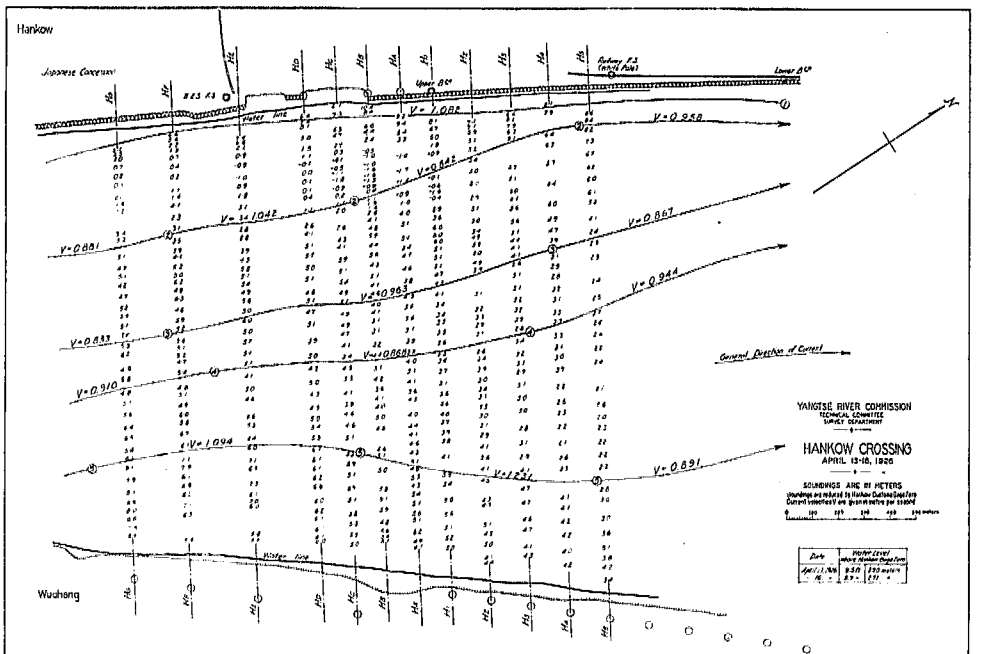

Hankow
Japanese Concession
Hankow Jetty
Upper Dock
Railway Pier (Peking Road)
Lower Dock
V=1.082
V=0.958
V=0.842
V=1.042
V=0.881
V=0.867
V=0.944
V=0.833
V=1.096
V=1.086
V=0.910
V=1.094
V=1.231
V=0.891
General Direction of Current
YANGTSE RIVER COMMISSION
TECHNICAL COMMITTEE
SURVEY DEPARTMENT
HANKOW CROSSING
APRIL 13-16, 1926
SOUNDINGS ARE IN METERS
Wuchang

PLATE 85

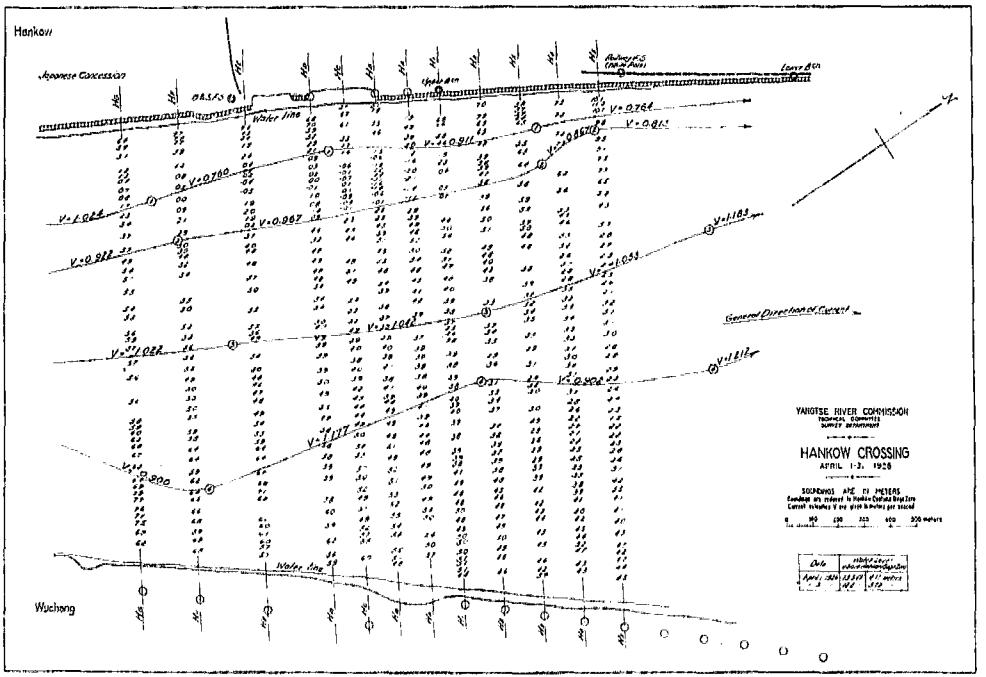

Hankow
Japanese Concession
Water line
Upper Bund
Lower Bund
Wuchang
General Direction of Current
YANGTSE RIVER COMMISSION
TECHNICAL COMMITTEE
SURVEY DEPARTMENT
HANKOW CROSSING
APRIL 1-3, 1928
SOUNDINGS ARE IN METERS
Corrected to mean of Hankow Gauge Zero
Current in meters per second per inch

PLATE 84

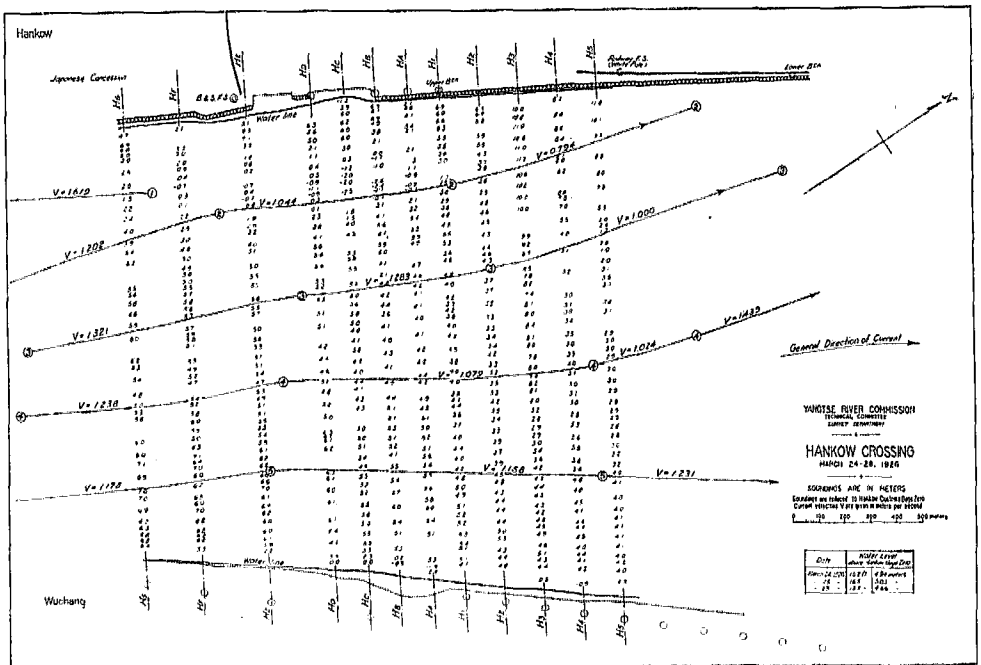

Hankow
Japanese Concession
Bund
Water line
Railway P.S.
Lower Dock
Upper Dock
V=1610
V=1208
V=1321
V=1238
V=1178
V=1044
V=1283
V=1079
V=1056
V=0794
V=1000
V=1014
V=1432
V=1231
General Direction of Current
Wuchang
YANGTSE RIVER COMMISSION
TECHNICAL COMMITTEE
SURVEY DEPARTMENT
HANKOW CROSSING
MARCH 24-28, 1926
SOUNDINGS ARE IN METERS
Soundings are reduced to Hankow Outreach Gage Zero
Current velocities V are given in meters per second
0 100 200 300 400 500 meters
Date
Water Level above Hankow Gage Zero
March 24 1926 10.27 Meters
" 26 " 10.19 "
" 28 " 10.11 "

PLATE 83

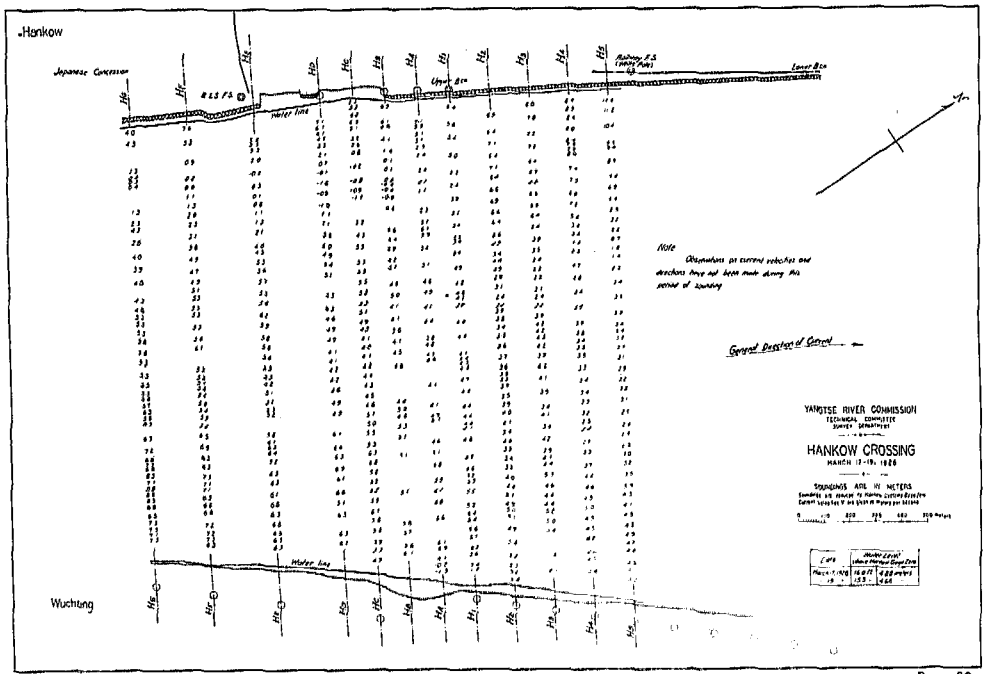

Hankow
Japanese Concession
B.S.S. P.S.
Water line
Upper Bm
Railway P.S. (Peking Hankow)
Lower Bm
Wuchang
Water line
Note
Observations on current velocities and directions have not been made during the period of sounding
General Direction of Current
YANGTSE RIVER COMMISSION
TECHNICAL COMMITTEE
SURVEY DEPARTMENT
HANKOW CROSSING
MARCH 13-19, 1926
SOUNDINGS ARE IN METERS
Soundings are reduced to Hankow Customs Datum
Current velocities in metres per second
0 500 1000 1500 2000 2500 Metres
Date
Water Levels above Hankow Gauge Datum
March 13, 1926
18 "
15.3 "
14.68 "

PLATE 82

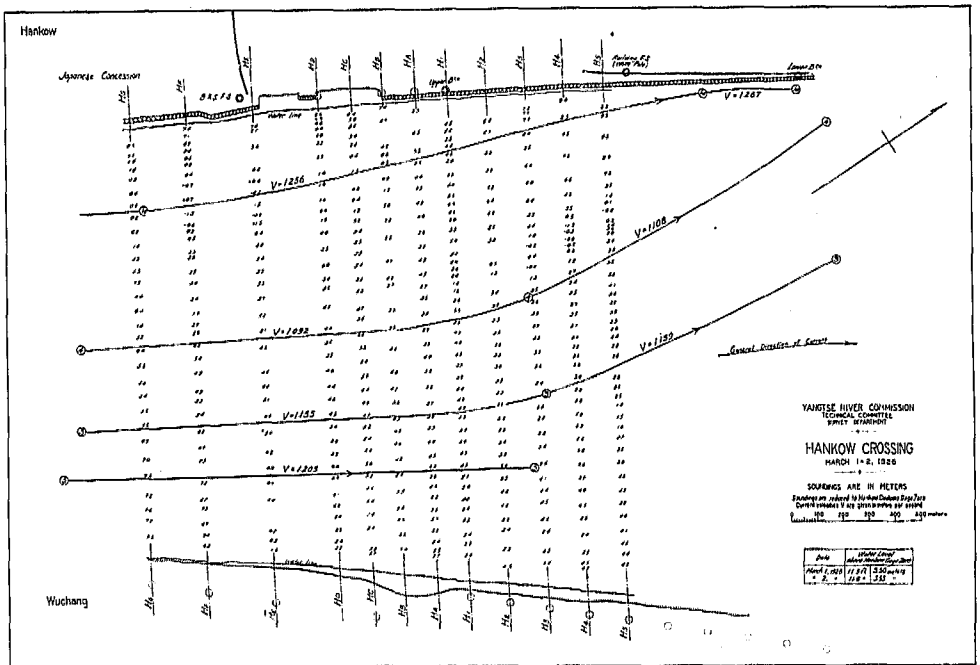

Hankow
Japanese Concession
Harbor Line
Upper Dike
Lower Dike
V=1267
V=1256
V=1108
V=1092
V=1139
V=1155
V=1209
General Direction of Current
Wuchang
YANGTSE RIVER COMMISSION
TECHNICAL COMMITTEE
SURVEY DEPARTMENT
HANKOW CROSSING
MARCH 1-2, 1926
SOUNDINGS ARE IN METERS
Soundings are reduced to Hankow Datum Zero
Dotted numbers 1 to 9 are ground-nuts for sinking
0 100 200 300 400 500 meters
Date
March 1, 1926
" 2 "

PLATE 81

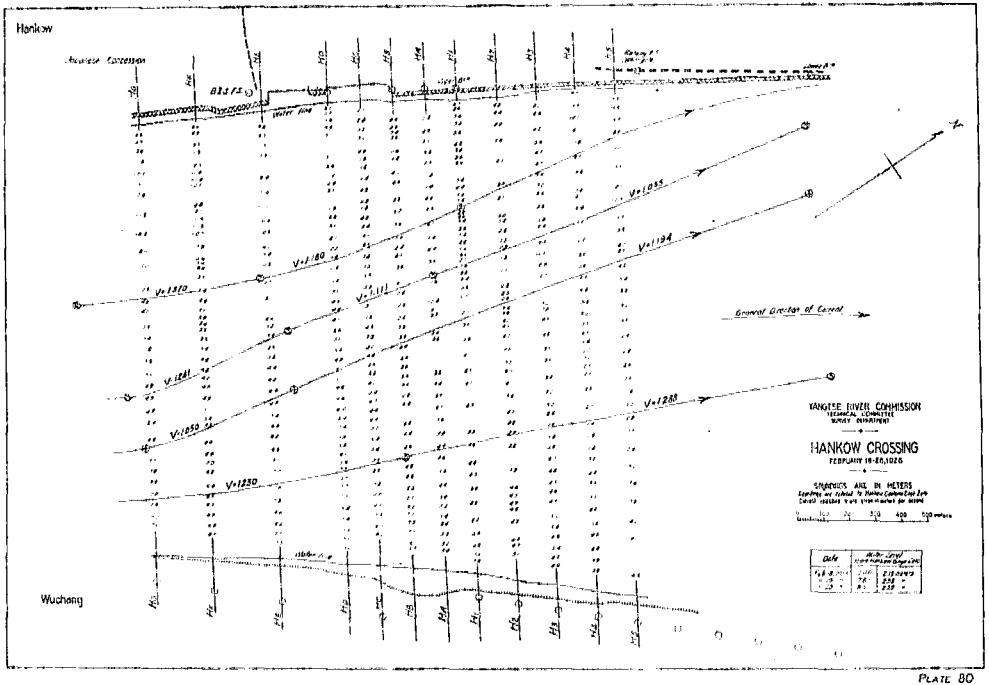

Hankow
Wuchang
Japanese Concession
Water line
V=1370
V=1180
V=1241
V=1050
V=1250
V=1111
V=1045
V=1194
V=1288
General Direction of Current
YANGTSE RIVER COMMISSION
TECHNICAL COMMITTEE
SURVEY DEPARTMENT
HANKOW CROSSING
FEBRUARY 18-20,1926
SOUNDINGS ARE IN METERS
Soundings are reduced to Hankow Customs Zero
Datum reached from observations per second
0 100 200 300 400 500 meters

PLATE 80

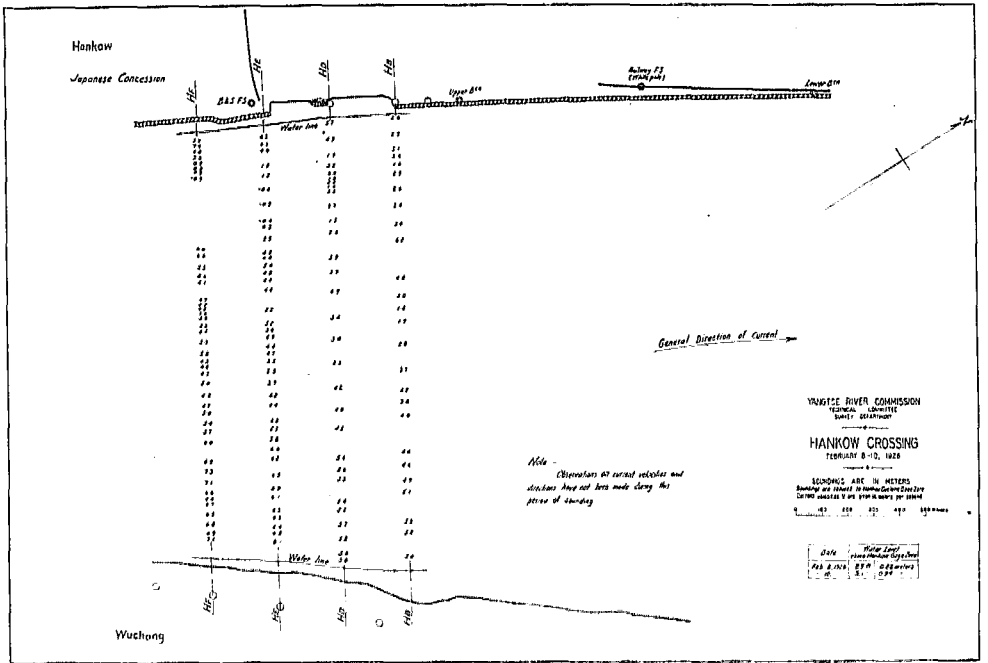

Hankow
Japanese Concession
HC
HB
H2
H3
B.S.F3
Water line
Upper Bar
Railway F2 (Hankow)
Lower Bar
General Direction of Current
Note -
Observations of current velocities and directions have not been made during this period of sounding
YANGTSE RIVER COMMISSION
TECHNICAL COMMITTEE
SURVEY DEPARTMENT
HANKOW CROSSING
FEBRUARY 8 -10, 1926
SOUNDINGS ARE IN METERS
Soundings are reduced to Hankow Gauge Zero 21m
Datum adopted 9 m. 91m B.M. above mean sea level
Date
Water Level above Hankow Gage Zero
Feb 8 1926
83 m
observations
10
3.
0.94
Water line
Wuchang

PLATE 79

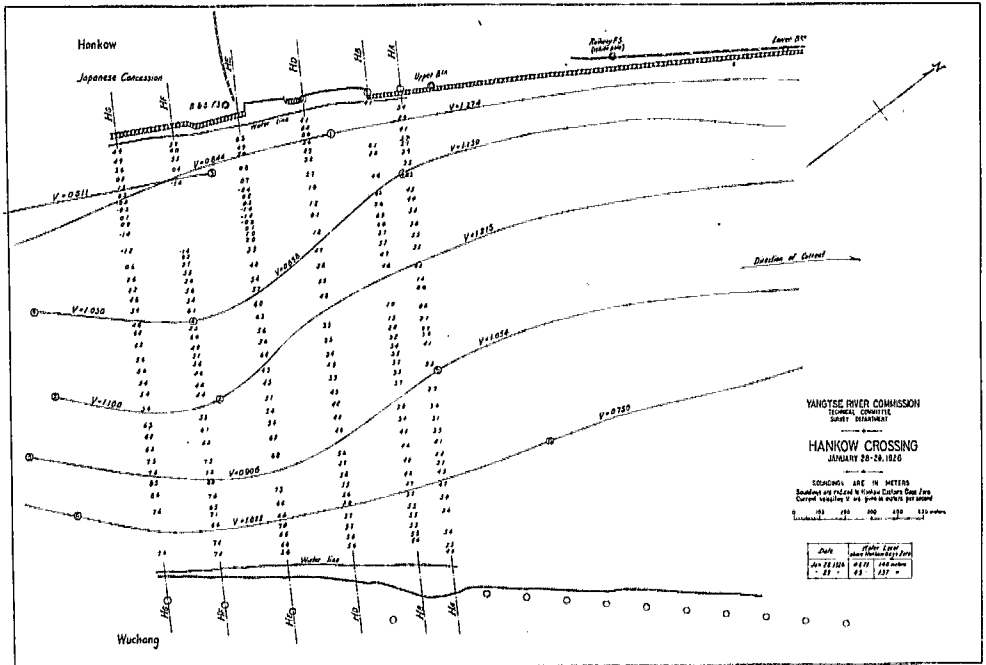

Hankow
Japanese Concession
Upper Bund
Railway Pier (Hubei pier)
Lower Bund
Water Line
Direction of Current
Wuchang
YANGTSE RIVER COMMISSION
TECHNICAL COMMITTEE
SURVEY DEPARTMENT
HANKOW CROSSING
JANUARY 28-29, 1926
SOUNDINGS ARE IN METERS
Soundings are reduced to Hankow Customs Gage Zero
Current velocities V are given in meters per second
0 100 200 300 400 500 meters
Date
Height above Hankow gage zero
Jan 28 1926
" 29 "
4.11
4.13
meters
"

PLATE 78

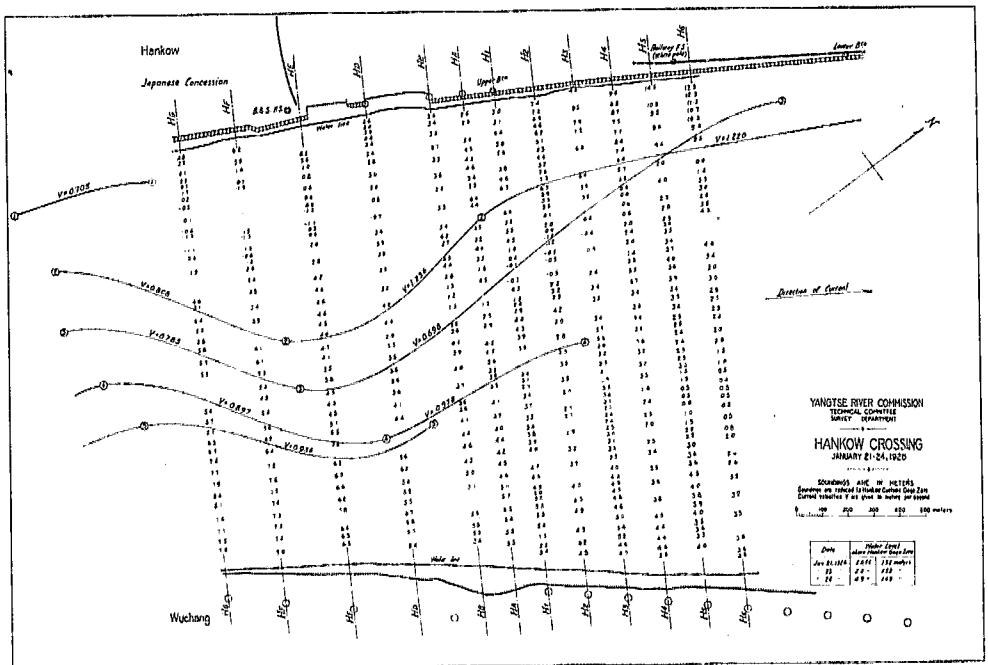

Hankow
Japanese Concession
885 Ft
Upper Bar
Railway Ft (Island point)
Lower Bar
Water line
V=0.704
V=0.869
V=0.769
V=0.897
V=0.936
V=1.334
V=0.658
V=0.728
V=1.220
Direction of Current
Wuchang
YANGTSE RIVER COMMISSION
TECHNICAL COMMITTEE
SURVEY DEPARTMENT
HANKOW CROSSING
JANUARY 21-24, 1920
SOUNDINGS ARE IN METERS
Soundings are reduced to Hankow Carbon Datum Zero
Current velocities V are given in meters per second
0 100 200 300 400 500 meters
Date
Water Level above Hankow Datum Zero
Jan 21, 1920 5.65 ft 1.72 meters
" 22 " 5.9 " 1.80 "
" 24 " 6.0 " 1.83 "

PLATE 77

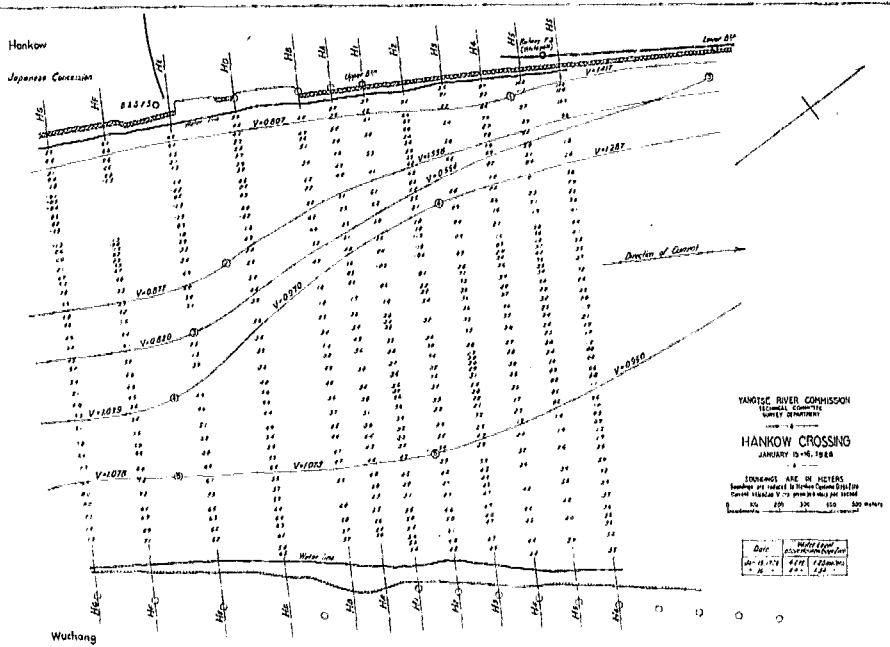

Hankow
Japanese Concession
Lower Bar
Upper Bar
Railway Pier (Old Pier)
Direction of Current
Water Line
Wuchang
YANGTSE RIVER COMMISSION
TECHNICAL COMMITTEE
SURVEY DEPARTMENT
HANKOW CROSSING
JANUARY 15-16, 1928
SOUNDINGS ARE IN METERS
0 100 200 300 400 500 meters

PLATE 76

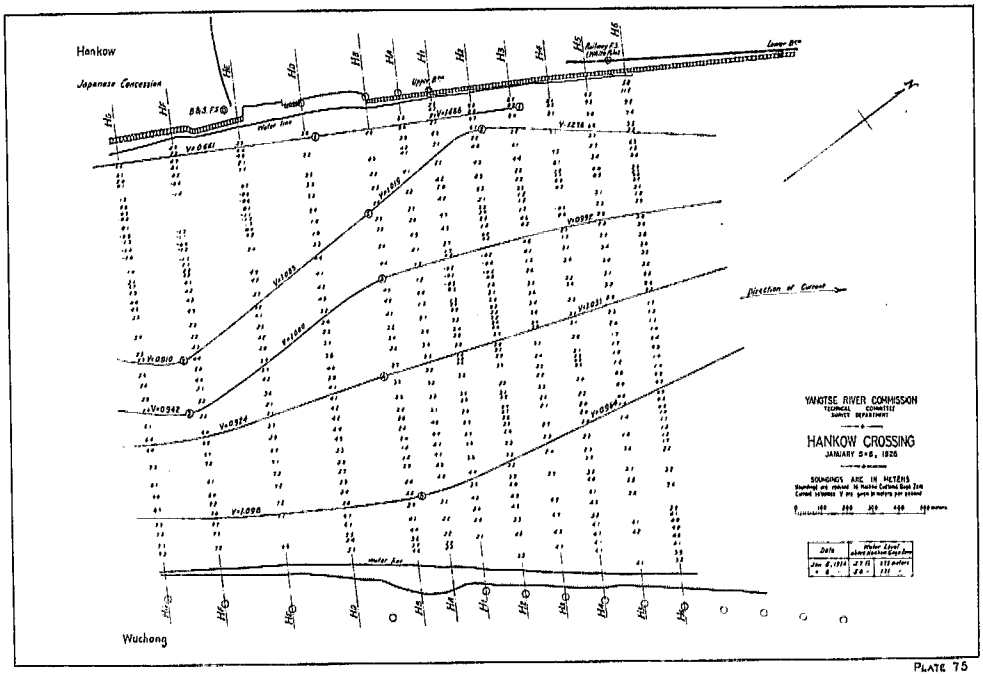

Hankow
Japanese Concession
Wuchang
Direction of Current
YANGTSE RIVER COMMISSION
TECHNICAL COMMITTEE
SURVEY DEPARTMENT
HANKOW CROSSING
JANUARY 5-6, 1926
SOUNDINGS ARE IN METERS
Sounding are reduced to Hankow Customs Gauge Zero
Current velocities V are given in meters per second
Date
Water Level above Hankow Gauge Zero
Jan 5, 1926
Jan 6, "

PLATE 75

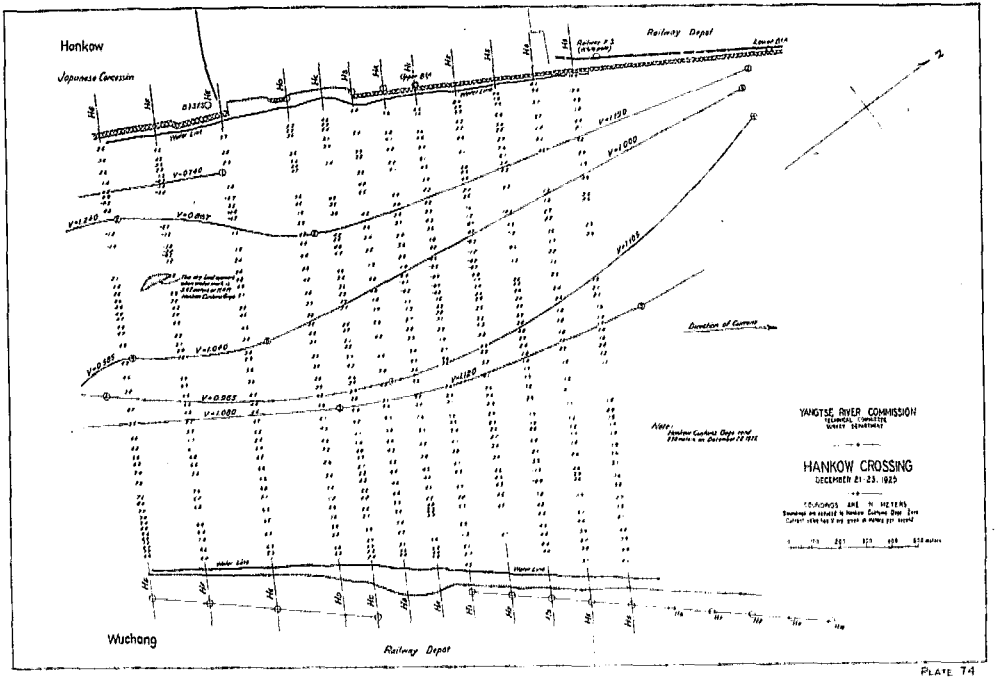

Hankow
Japanese Concession
Railway Depot
Lower Bund
Upper Bund
Water Line
V=0.740
V=1.220
V=0.847
V=1.130
V=1.080
V=1.165
V=1.010
V=0.985
V=0.965
V=1.080
V=1.150
Direction of Current
N
Note:
YANGTSE RIVER COMMISSION
TECHNICAL COMMITTEE
SURVEY DEPARTMENT
HANKOW CROSSING
DECEMBER 21-23, 1925
SOUNDINGS ARE IN METERS
Wuchang
Railway Depot

PLATE 74

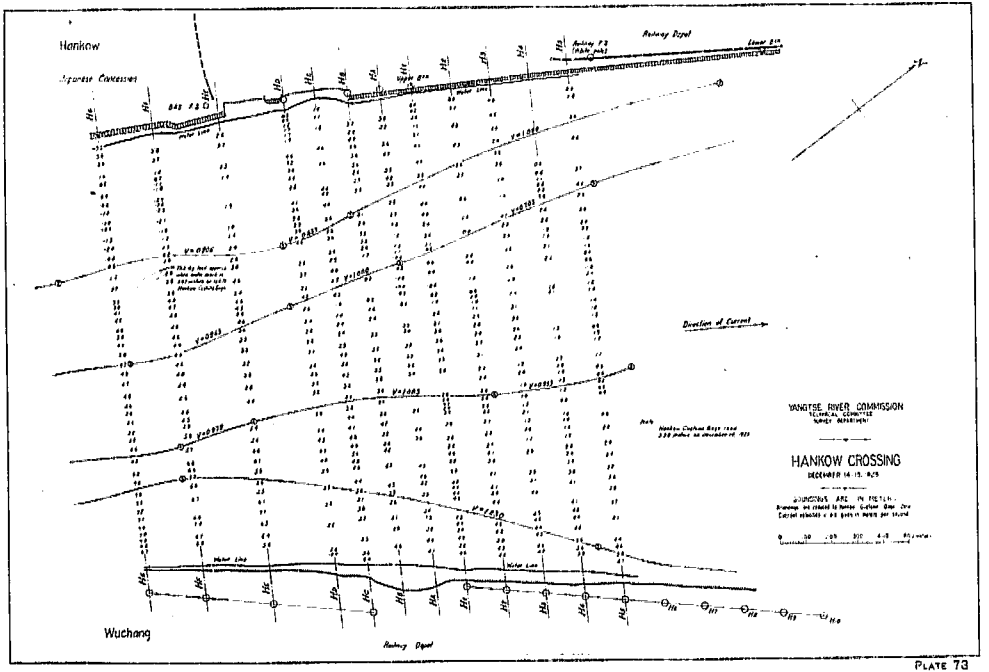

Hankow
Japanese Concession
Railway Depot
Direction of Current
YANGTSE RIVER COMMISSION
TECHNICAL COMMITTEE
SURVEY DEPARTMENT
HANKOW CROSSING
DECEMBER 14 15, 1929
SOUNDINGS ARE IN FEET H.
Wuchang
Railway Depot

PLATE 73

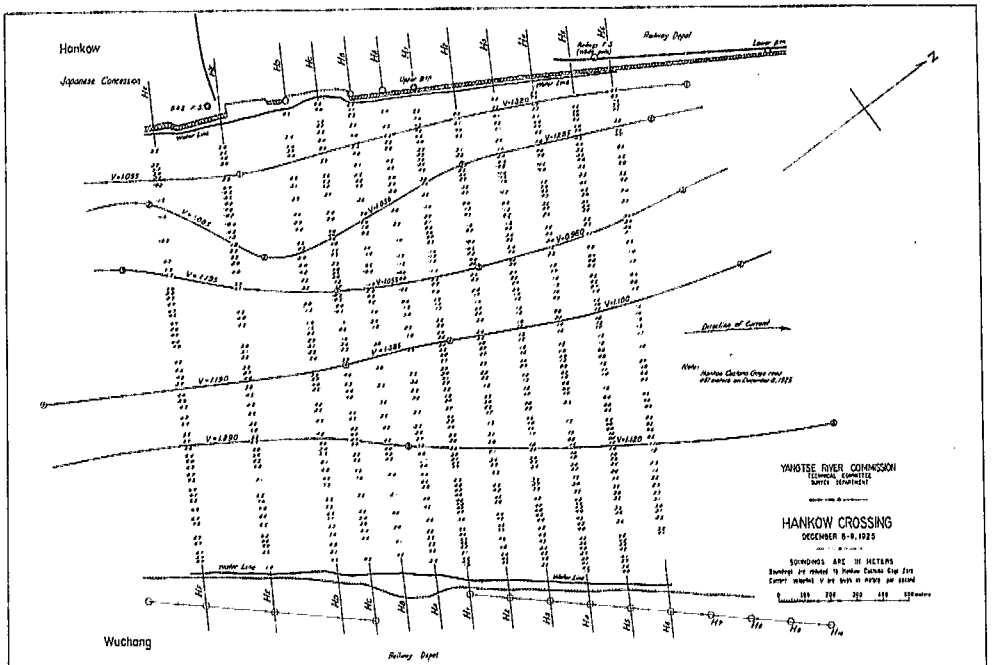

Hankow
Japanese Concession
Railway Depot
Lower Elm
Water Line
Water Elm
V=1320
V=1285
V=1085
V=1095
V=1035
V=1040
V=1191
V=1100
V=1190
V=1381
V=1180
V=1880
Direction of Current
Water Line
Water Elm
Railway Depot
Wuchang
N
YANGTSE RIVER COMMISSION
TECHNICAL COMMITTEE
SURVEY DEPARTMENT
HANKOW CROSSING
DECEMBER 8-9, 1925
SOUNDINGS ARE IN METERS
0 100 200 300 400 500 meters

PLATE 72

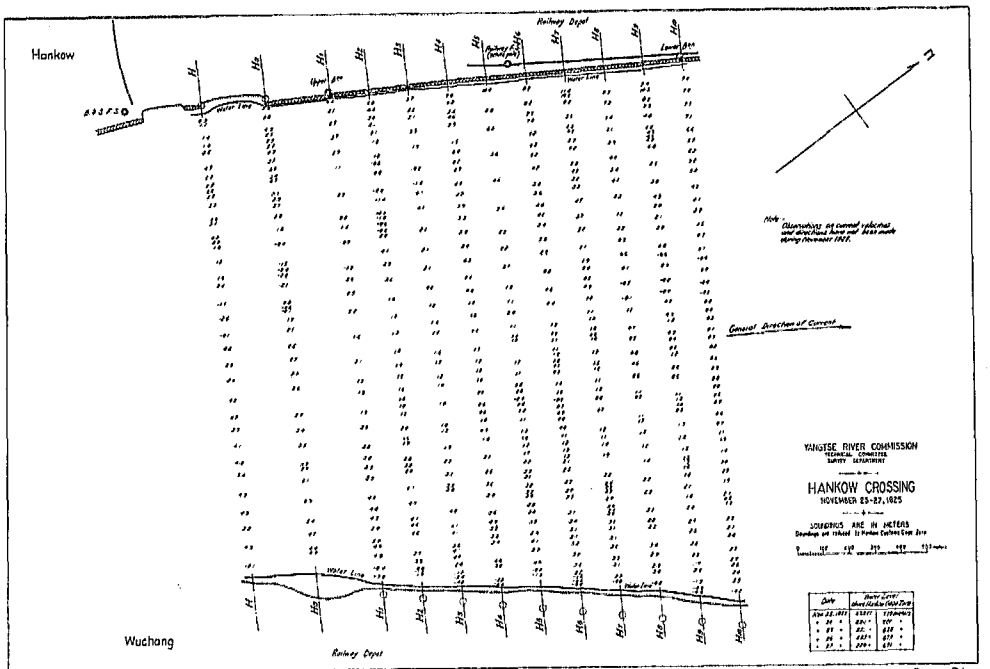

Hankow
Railway Depot
Upper Bund
Lower Bund
Water Line
H1
H2
H3
H4
H5
H6
H7
H8
H9
H10
H11
Wuchang
Railway Depot
Note:-
Observations on current velocities and directions at Lower and Mean levels during November 1925.
General Direction of Current
YANGTSE RIVER COMMISSION
TECHNICAL COMMITTEE
SURVEY DEPARTMENT
HANKOW CROSSING
NOVEMBER 25-27, 1925
SOUNDINGS ARE IN METERS
Soundings are reduced to Hankow Customs Gauge Zero
0 100 200 300 400 500 Meters
Date
Upper Level above Hankow Water Datum
Lower Level above Hankow Water Datum
Nov 25, 1925 6.577 7.13 Meters
" 26 " 6.84 " 7.09 "
" 27 " 6.82 " 6.98 "
" 28 " 6.84 " 6.97 "
" 29 " 6.99 " 6.95 "

PLATE 71

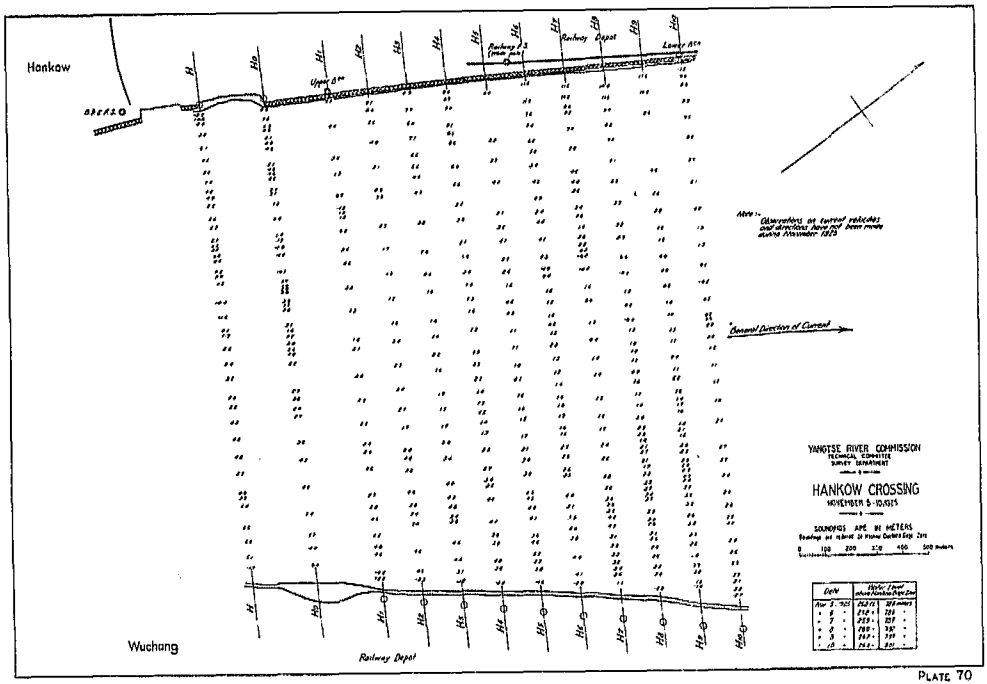

Hankow
Wuchang
Railway Depot
Lower Arc
Railway Depot
Note:- Observations on current velocities and directions have not been made during November 1913
General Direction of Current
YANGTSE RIVER COMMISSION
TECHNICAL COMMITTEE
SURVEY DEPARTMENT
HANKOW CROSSING
NOVEMBER 8 - 10, 1913
SOUNDINGS ARE IN METERS
0 100 200 300 400 500 meters
Depth
Nov 7, 1913
8
9
10
11
12
13

PLATE 70

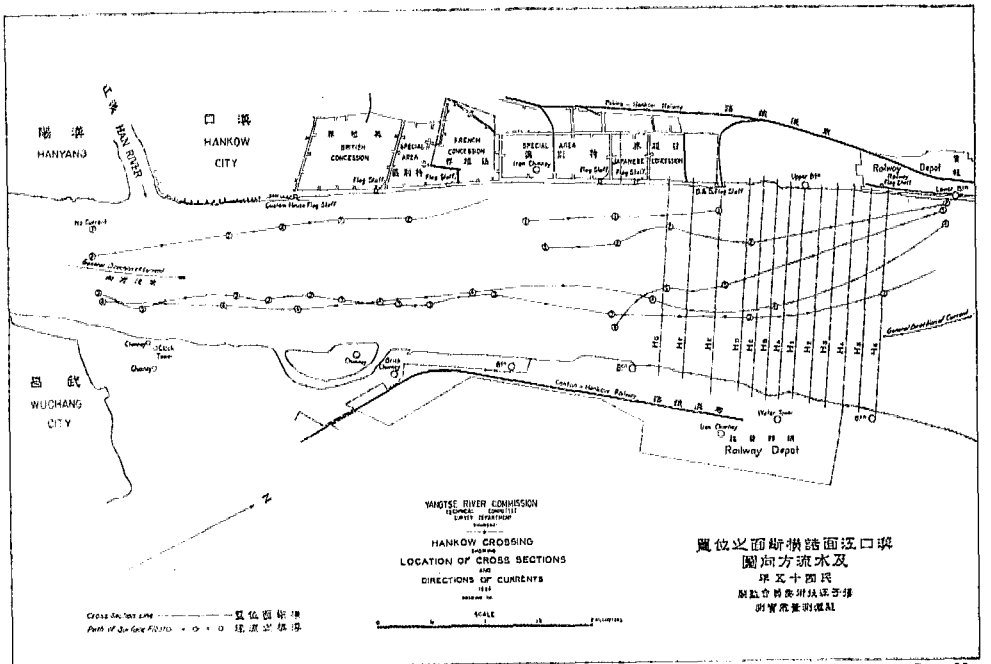

漢陽
HANYANG
漢口
HANKOW
CITY
HAN RIVER
漢水
BRITISH CONCESSION
SPECIAL AREA
GERMAN CONCESSION
SPECIAL AREA
JAPANESE CONCESSION
Peking - Hankow Railway
Railway Depot
Upper Arm
Lower Arm
No Current
General Direction of Current
武昌
WUCHANG
CITY
Clock Tower
Iron Quarry
Canton - Hankow Railway
Water Tower
Railway Depot
N
YANGTSE RIVER COMMISSION
HANKOW CROSSING
SHOWING
LOCATION OF CROSS SECTIONS
AND
DIRECTIONS OF CURRENTS
SCALE
Cross Section Line
Path of Surface Floats
漢口斷面橫截面位置及
水流方向圖
揚子江水利委員會
測量隊繪

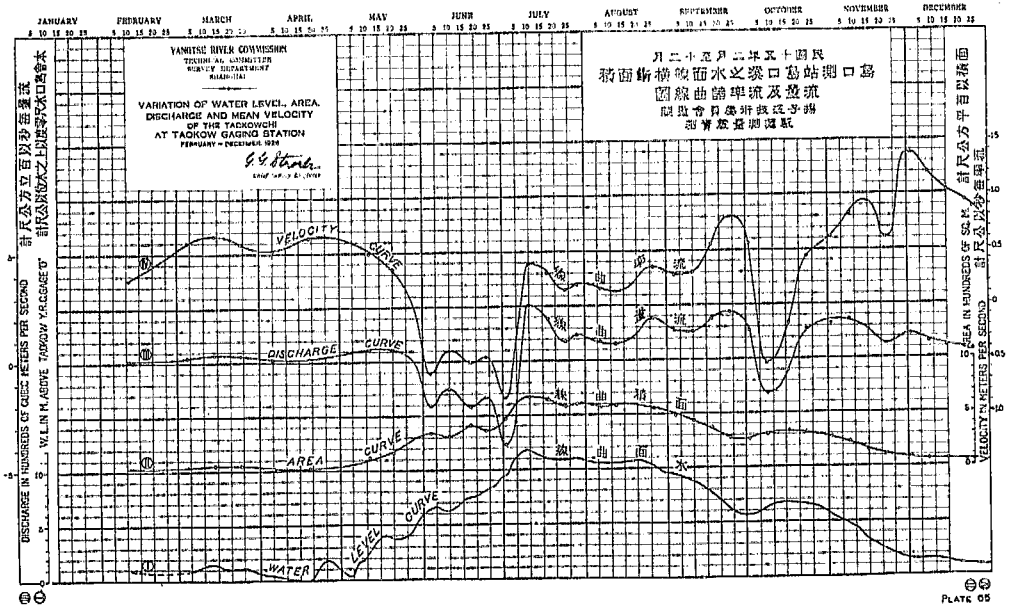
PLATE 69

YANGTSE RIVER COMMISSION
VARIATION OF WATER LEVEL, AREA, DISCHARGE AND MEAN VELOCITY OF TEK AND YUAN RIVERS AT VARIOUS GAGING STATIONS
1924
CHANGTEH ON YUAN RIVER
VELOCITY CURVE
DISCHARGE CURVE
WATER LEVEL CURVE
AREA CURVE
PLATE 66

VANTSE RIVER COMMISSION
TECHNICAL COMMITTEE
VARIATION OF WATER LEVEL, AREA, DISCHARGE AND MEAN VELOCITY AT VARIOUS GAGING STATIONS
1931
SIANGYIN STATION
湘陰站
FEBRUARY
MARCH
APRIL
MAY
JUNE
JULY
DISCHARGE IN THOUSANDS OF CUBIC METERS PER SECOND
WL. IN M ABOVE SIANGYIN CUSTOMS DATE 0°
AREA IN THOUSANDS OF SQ.M.
VELOCITY IN METERS PER SECOND
HAOHOKOW STATION
岳口站
WL. IN M ABOVE HAOHOKOW V.R.C. DATE 0°
PLATE 61

JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER
NOVEMBER
DECEMBER
VELOCITY CURVE
DISCHARGE CURVE
AREA CURVE
WATER LEVEL CURVE
YANGTSE RIVER COMMISSION
TECHNICAL COMMITTEE
HANKOW DIVISION
SHANGHAI
VARIATION OF WATER LEVEL, AREA, DISCHARGE AND MEAN VELOCITY OF TAIPINGKOW GAGING STATION AT TAIPINGKOW GAGING STATION AND DISCHARGE CURVE
C. C. Huang
Chief Survey Engineer

PLATE 60


JANUARY
FEBRUARY
MARCH
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER
NOVEMBER
DECEMBER
YANGTSE RIVER COMMISSION
TECHNICAL ADVISER'S
SURVEY DEPARTMENT
NANKING
VARIATION OF WATER LEVEL, AREA, DISCHARGE AND MEAN VELOCITY OF THE TACKOWCHI AT TAOKOW GAGING STATION
FEBRUARY - DECEMBER 1924
G. G. Stander
Chief Hydrographic Surveyor
民國十四年二月至十二月
陶口站測量水面橫斷面積
流量及平均流速曲線圖
揚子江水利委員會
測量課製圖股
VELOCITY CURVE
DISCHARGE CURVE
AREA CURVE
WATER LEVEL CURVE
DISCHARGE IN HUNDREDS OF CUBIC METERS PER SECOND
計尺公方立百以秒每量流
W.L. IN M. ABOVE TAOKOW V.R.GAGE 0'
計尺公以之上陶口水尺零點為本
AREA IN HUNDREDS OF SQ. M.
計尺公方平百以積面
VELOCITY IN METERS PER SECOND
計尺公以秒每速流
PLATE 05

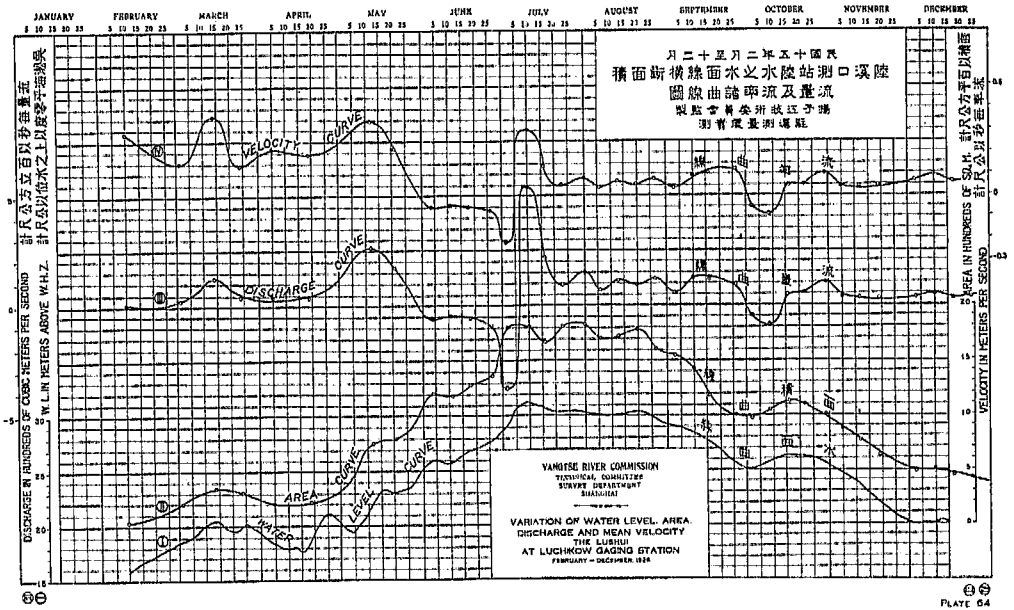

民國十五年二月至十二月
陸溪口測站水位水面橫斷面積
流量及流速曲線圖
VANGTSE RIVER COMMISSION
TECHNICAL COMMITTEE
SURVEY DEPARTMENT
SHANGHAI
VARIATION OF WATER LEVEL, AREA
DISCHARGE AND MEAN VELOCITY
THE LUSHUI
AT LUCHIKOW GAGING STATION
FEBRUARY – DECEMBER 1926
DISCHARGE IN HUNDREDS OF CUBIC METERS PER SECOND
W.L.IN METERS ABOVE W.H.Z.
AREA IN HUNDREDS OF SQ.M.
VELOCITY IN METERS PER SECOND
VELOCITY CURVE
DISCHARGE CURVE
AREA CURVE
LEVEL CURVE
JANUARY
FEBRUARY
MARCH
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER
NOVEMBER
DECEMBER

PLATE 64

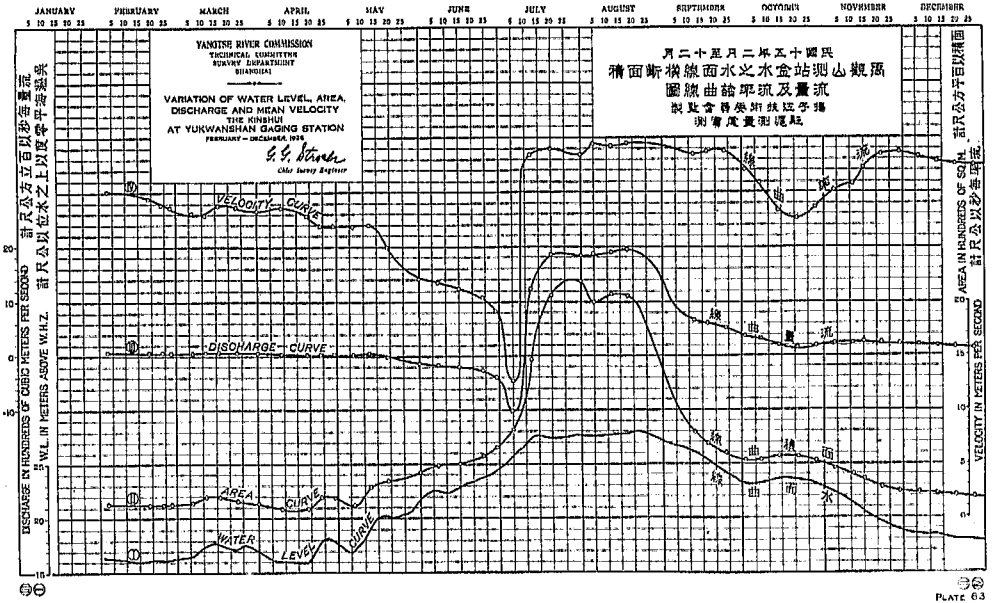
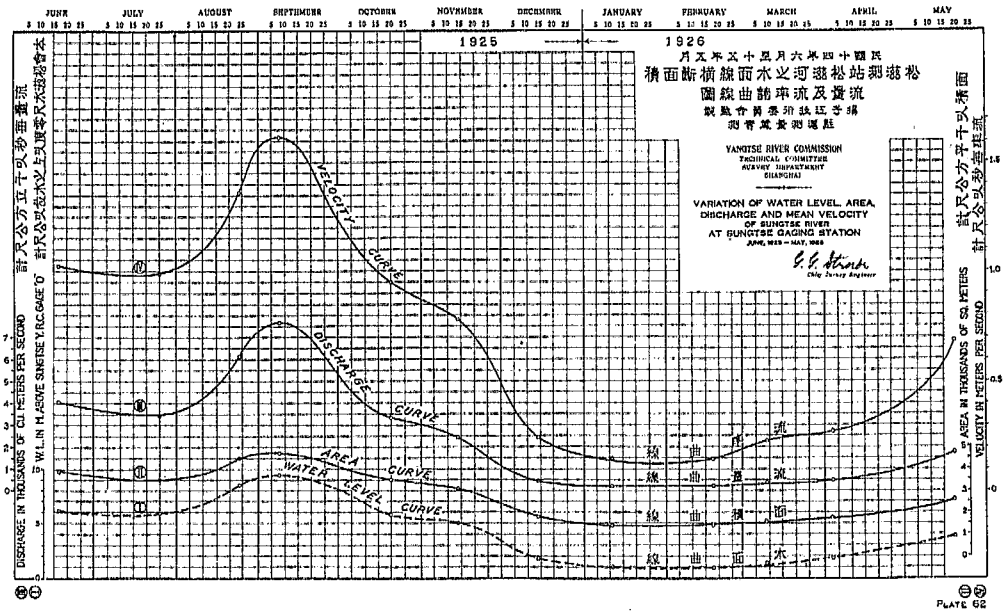

JANUARY
FEBRUARY
MARCH
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER
NOVEMBER
DECEMBER
YANGTSE RIVER COMMISSION
TECHNICAL COMMITTEE
SURVEY DEPARTMENT
SHANGHAI
VARIATION OF WATER LEVEL, AREA, DISCHARGE AND MEAN VELOCITY
THE KINSHUI
AT YUKWANSHAN GAGING STATION
FEBRUARY — DECEMBER, 1936
C. C. Chao
Chief Survey Engineer
民國十五年二月至十二月
錦屏山測站水文水面線橫斷面積
流量及流速曲線圖
設立當時受新疏江等處
測有流量測記起
VELOCITY CURVE
DISCHARGE CURVE
AREA CURVE
WATER LEVEL CURVE
DISCHARGE IN HUNDREDS OF CUBIC METERS PER SECOND
計尺公方立百以秒每量流
W.L. IN METERS ABOVE W.H.Z.
計尺公以位水之上以度零平海點
AREA IN HUNDREDS OF SQ.M.
計尺公方平百以積面
VELOCITY IN METERS PER SECOND
計尺公以秒每速流

PLATE 63



民國十四年六月至十五年五月
松滋測站松滋河之水面線橫斷面積
流量及流率諸曲線圖
揚子江技術委員會數製
駐滬測量處查測

YANGTSE RIVER COMMISSION
TECHNICAL COMMITTEE
SURVEY DEPARTMENT
SHANGHAI

VARIATION OF WATER LEVEL, AREA,
DISCHARGE AND MEAN VELOCITY
OF SUNGTSE RIVER
AT SUNGTSE GAGING STATION
JUNE, 1925 – MAY, 1926

G. G. Strom
Chief Survey Engineer

PLATE 62

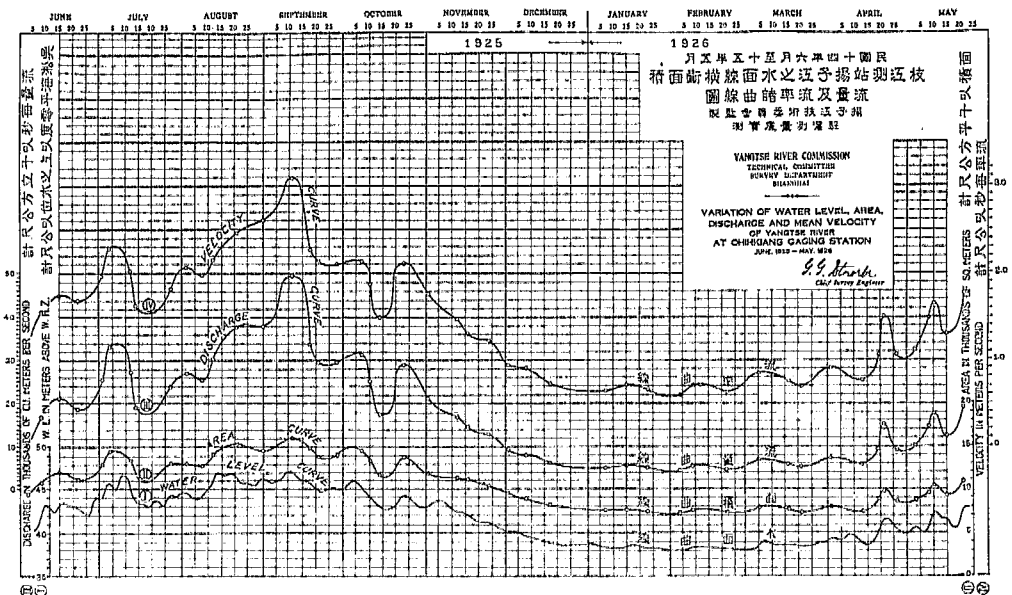
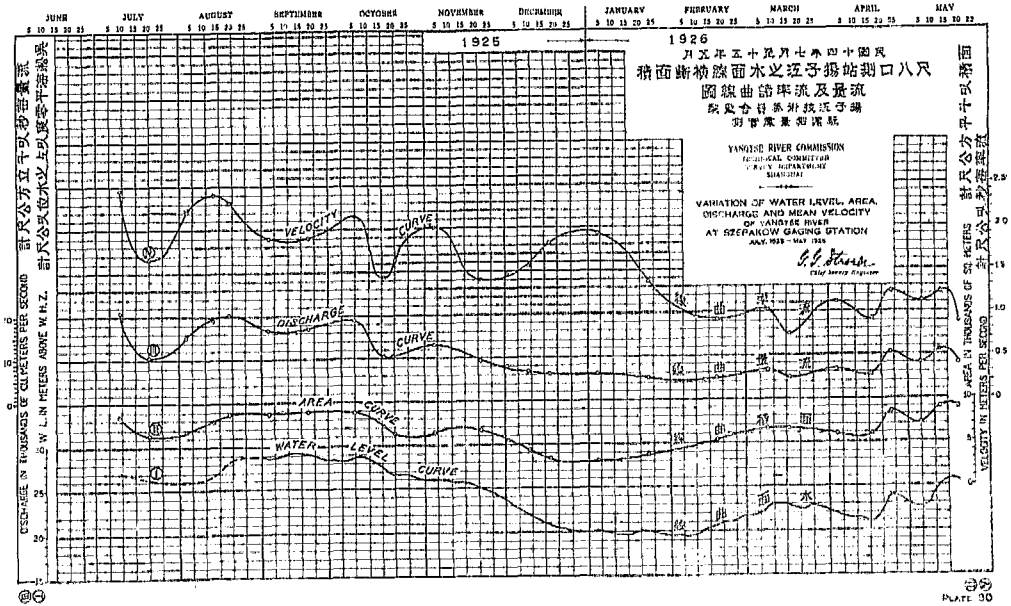

JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER
NOVEMBER
DECEMBER
JANUARY
FEBRUARY
MARCH
APRIL
MAY
1925
1926
民國十四年六月至十五年五月
揚子江鎮江站測流斷面水位流量及面積曲線圖
VARIATION OF WATER LEVEL, AREA, DISCHARGE AND MEAN VELOCITY OF YANGTSE RIVER AT CHINKIANG GAGING STATION
JUNE, 1925 — MAY, 1926
G. G. Ashmun
Chief Survey Engineer
VELOCITY
DISCHARGE
AREA
WATER LEVEL
DISCHARGE IN THOUSANDS OF CU. METERS PER SECOND
W. L. IN METERS ABOVE W. R. Z.
AREA IN THOUSANDS OF SQ. METERS
VELOCITY IN METERS PER SECOND

PLATE 61



中國民國十四年七月至十五年四月
揚子江水利委員會測量揚子江口八段
斷面水位流量及流速曲線圖
YANGTSE RIVER COMMISSION
TECHNICAL COMMITTEE
SURVEY DEPARTMENT
SHANGHAI
VARIATION OF WATER LEVEL, AREA, DISCHARGE AND MEAN VELOCITY OF YANGTSE RIVER AT SZEPAKOW GAGING STATION
JULY, 1925 – MAY 1926
C. H. Stream
Chief Survey Engineer

PLATE 30

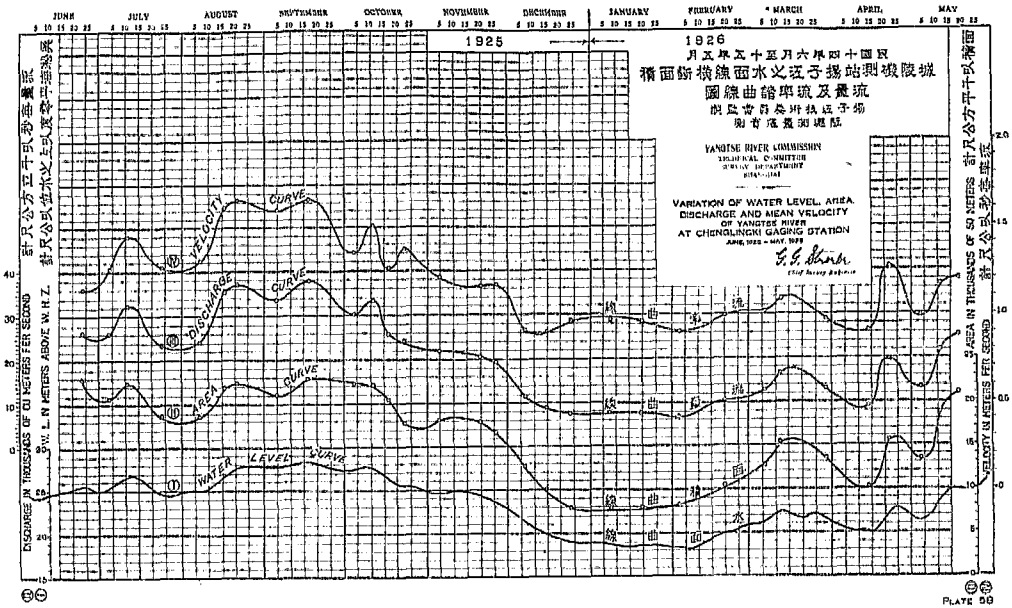
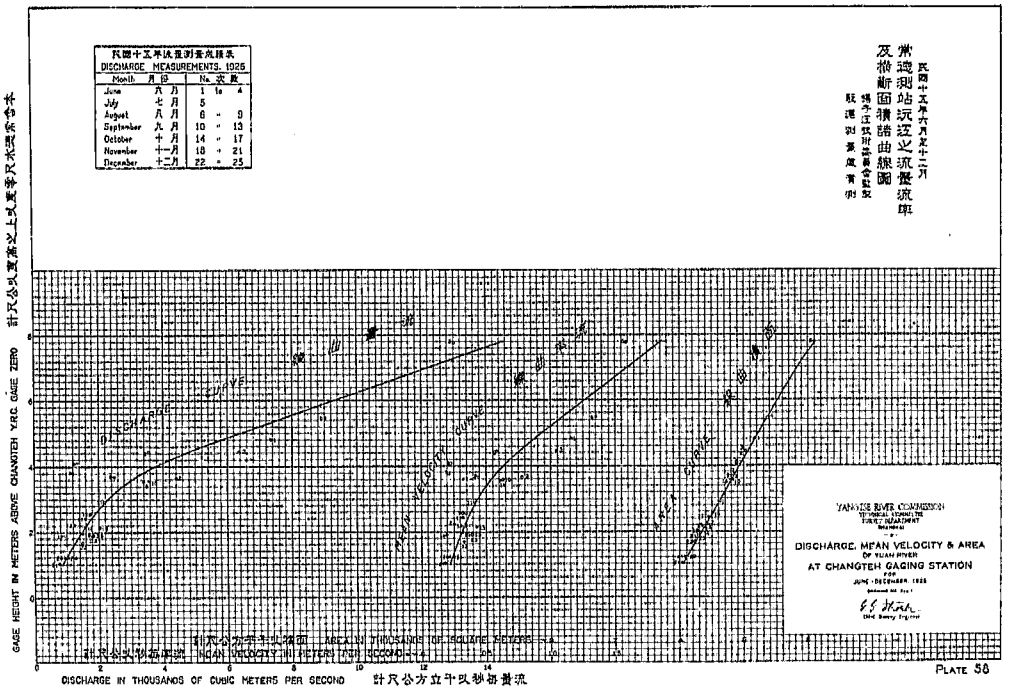

JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER
NOVEMBER
DECEMBER
JANUARY
FEBRUARY
MARCH
APRIL
MAY
1925
1926
DISCHARGE IN THOUSANDS OF CU METERS PER SECOND
計尺公方立千以秒金黨派
AREA IN THOUSANDS OF SQ METERS
計尺公方平千以積面
VELOCITY IN METERS PER SECOND
計尺公以秒金里突
GAUGE IN METERS ABOVE W. H. Z.
計尺公以位水之上以度零平海淞吳
(1) VELOCITY CURVE
(2) DISCHARGE CURVE
(3) AREA CURVE
(4) WATER LEVEL CURVE
流速曲線
流量曲線
面積曲線
水位曲線
中國揚子江水利委員會
揚子江水利委員會測驗站橫斷面水位流量速率曲線圖
1925年6月至1926年5月
YANGTSE RIVER COMMISSION
VARIATION OF WATER LEVEL, AREA, DISCHARGE AND MEAN VELOCITY OF YANGTSE RIVER AT CHENGLINGKI GAGING STATION
APRIL 1925 – MAY 1926
G. G. Shaw
Chief Survey Engineer

PLATE 28


民國十五年流量測量成績表
DISCHARGE MEASUREMENTS, 1926
Month 月份 | No. 次數
June 六月 1 to 4
July 七月 5
August 八月 6 " 9
September 九月 10 " 13
October 十月 14 " 17
November 十一月 18 " 21
December 十二月 22 " 25
常識測站沅江流量流率
及橫斷面積諸曲線圖
民國十五年六月至十二月
揚子江水利委員會製
駱運斌 黃廣青 繪
GAGE HEIGHT IN METERS ABOVE CHANGTEH Y.R.C. GAGE ZERO
計尺公以置高之上以度等尺水測常各本
DISCHARGE IN THOUSANDS OF CUBIC METERS PER SECOND
流量每秒千立方公尺計
AREA IN THOUSANDS OF SQUARE METERS
計尺公方平千以積面
MEAN VELOCITY IN METERS PER SECOND
計尺公以秒每率速均平
DISCHARGE CURVE
AREA CURVE
MEAN VELOCITY CURVE
YANGTZE RIVER COMMISSION
TECHNICAL ADVISORY
SURVEY DEPARTMENT
DISCHARGE, MEAN VELOCITY & AREA
OF YUAN RIVER
AT CHANGTEH GAGING STATION
FOR
JUNE - DECEMBER, 1926
Chief Survey Engineer
PLATE 58

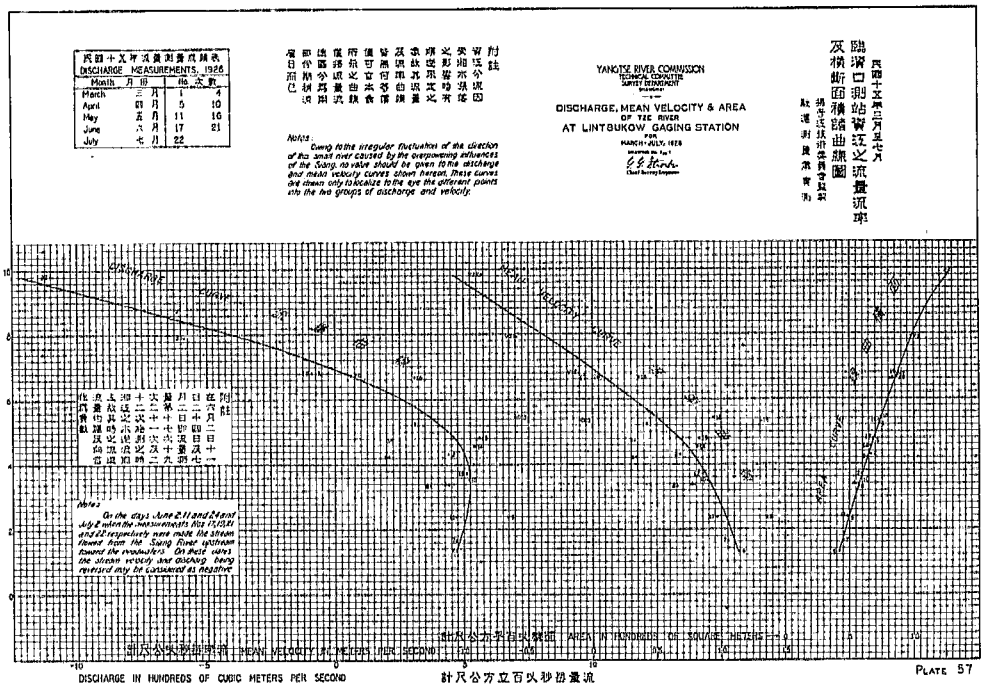
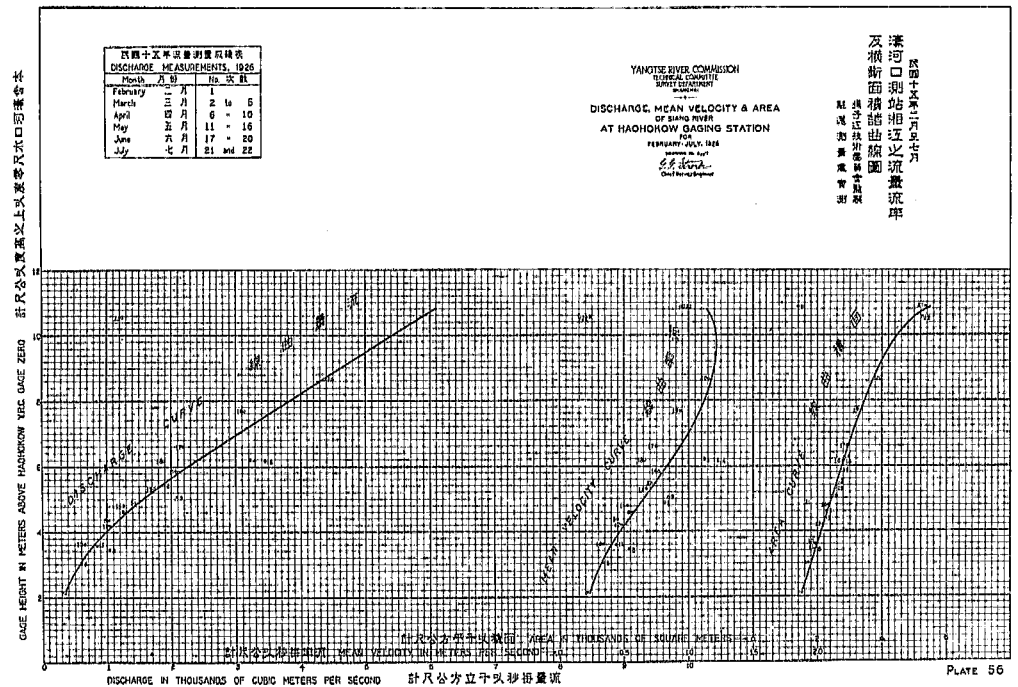

民國十五年三月至七月
臨濟口測站實近之流量流速及橫斷面積臨時曲線圖
揚子江水利委員會製製
DISCHARGE, MEAN VELOCITY & AREA OF THE RIVER AT LINTSUKOW GAGING STATION FOR MARCH-JULY, 1926
YANGTZE RIVER COMMISSION
TECHNICAL COMMITTEE
SURVEY DEPARTMENT
Chief Survey Engineer
Notes:- Owing to the irregular fluctuations of the direction of the small river caused by the overpowering influences of the Siang, no value should be given to the discharge and mean velocity curves shown hereon. These curves are drawn only to localize to the eye the different points into the two groups of discharge and velocity.
附註
因湘水之影響本河流向時有變動故流量及流速之曲線祇可視為近似
民國十五年臨時測量流量表
DISCHARGE MEASUREMENTS, 1926
Month 月份 No. 次數
March 三月 1 4
April 四月 9 10
May 五月 11 16
June 六月 17 21
July 七月 22
Notes:- On the days June 21 and 24 and July 2 when the measurements Nos 15,16,17, and 21 respectively were made the stream flowed from the Siang River southern toward the mountains. On these days the stream velocity and discharg being reversed may be considered as negative
附註
六月二十一日二十四日及七月二日量測之流量第十五十六十七及二十一次流向均自湘江南流入山故流速流量均作負數
GAGE HEIGHT IN METERS ABOVE LINTSUKOW Y.R.C. GAGE ZERO 計尺公尺數表臨水之上入點尺水口測站零水
DISCHARGE IN HUNDREDS OF CUBIC METERS PER SECOND
流量以百立方公尺計
MEAN VELOCITY OF STREAM PER SECOND 每秒公尺計流速
AREA IN HUNDREDS OF SQUARE METERS 橫斷面積以百平方公尺計

PLATE 57


民國十五年流量測量成績表
DISCHARGE MEASUREMENTS, 1926
Month 月份
No. 次數
February 二月 1
March 三月 2 to 5
April 四月 6 " 10
May 五月 11 " 16
June 六月 17 " 20
July 七月 21 and 22
YANGTSE RIVER COMMISSION
TECHNICAL COMMITTEE
SURVEY DEPARTMENT
DISCHARGE, MEAN VELOCITY & AREA
OF SIANG RIVER
AT HAOHOKOW GAGING STATION
FOR
FEBRUARY-JULY, 1926
Chief Hydraulic Engineer
民國十五年二月至七月
漾河口測站相近之流量流率
及橫斷面積諧曲線圖
揚子江水利委員會技術委員會測製
GAGE HEIGHT IN METERS ABOVE HAOHOKOW VRC GAGE ZERO
計尺公尺數高出以其參尺上以
DISCHARGE CURVE
MEAN VELOCITY CURVE
AREA CURVE
DISCHARGE IN THOUSANDS OF CUBIC METERS PER SECOND
流量每秒以千立方公尺計
AREA IN THOUSANDS OF SQUARE METERS
MEAN VELOCITY IN METERS PER SECOND
計尺公尺數平以橫面
計尺公尺數平以流率
PLATE 56

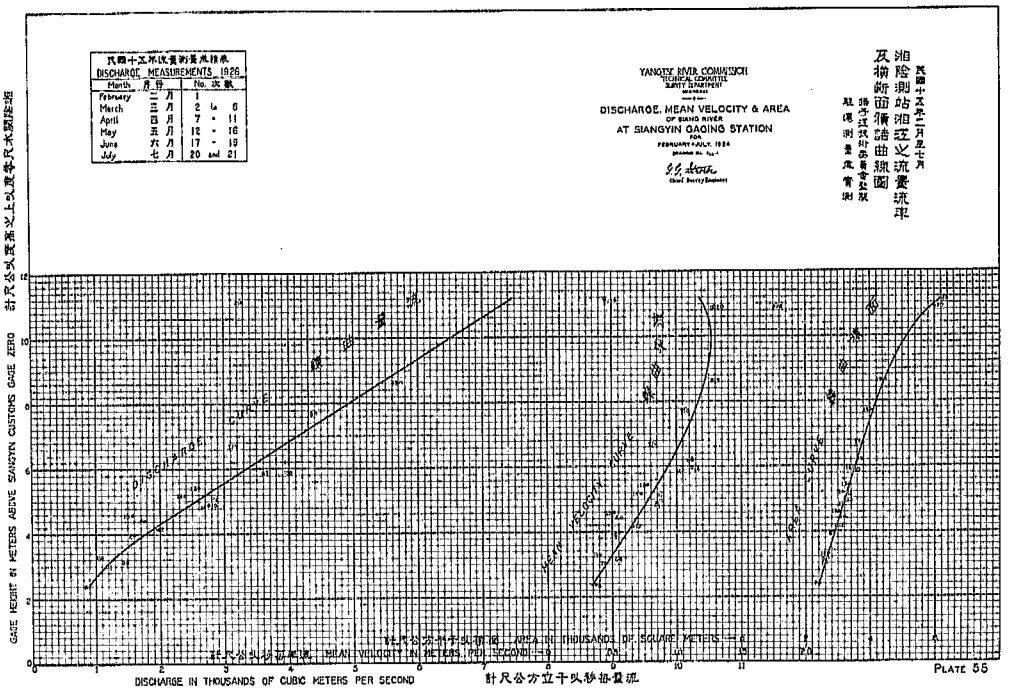
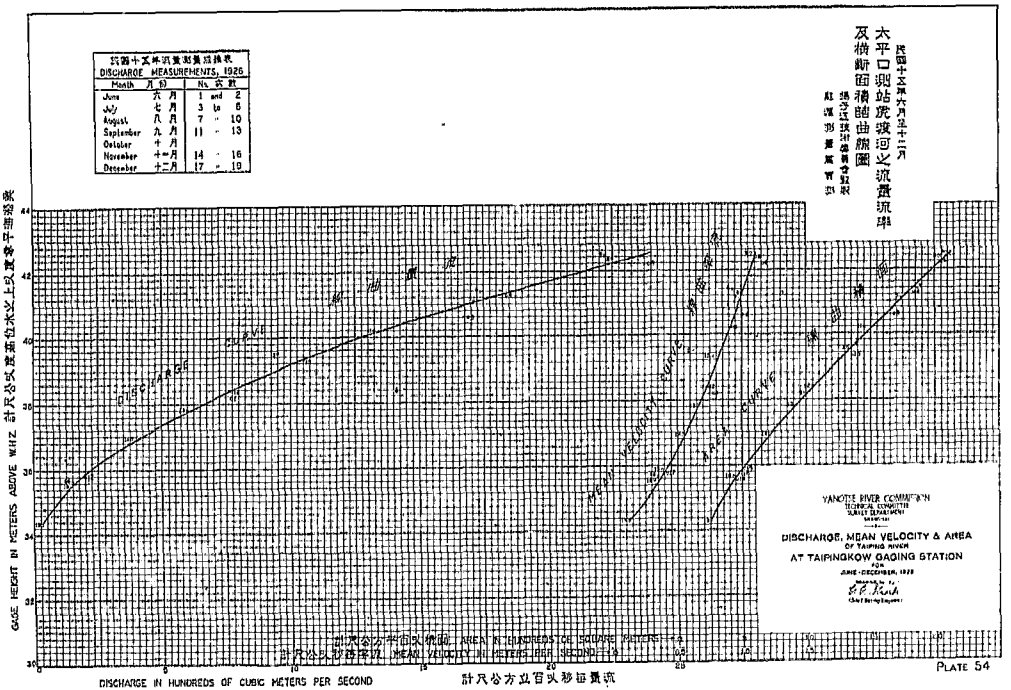

民國十五年二月至七月
湘臉測站湘江流量流速及橫斷面積曲線圖
揚子江水利委員會製
YANGTSE RIVER COMMISSION
TECHNICAL COMMITTEE
SURVEY DEPARTMENT
DISCHARGE, MEAN VELOCITY & AREA
OF SIANG RIVER
AT SIANGYIN GAOING STATION
FOR
FEBRUARY-JULY, 1926
民國十五年
DISCHARGE MEASUREMENTS 1926
Month 月份 No. 次數
February 二月 1
March 三月 2 to 6
April 四月 7 to 11
May 五月 12 to 16
June 六月 17 to 19
July 七月 20 and 21
DISCHARGE
MEAN VELOCITY
AREA
GAGE HEIGHT IN METERS ABOVE SIANGYIN CUSTOMS GAGE ZERO
計尺公头度高文上以度零尺本關湘湖
DISCHARGE IN THOUSANDS OF CUBIC METERS PER SECOND
流量以千立方公尺計
AREA IN THOUSANDS OF SQUARE METERS
面積以千方公尺計
MEAN VELOCITY IN METERS PER SECOND
流速以公尺計

PLATE 55



民國十五年流量測驗表 DISCHARGE MEASUREMENTS, 1926		
Month 月份	No. 次數	
June 六月	1 and	2
July 七月	3 to	6
August 八月	7 "	10
September 九月	11 "	13
October 十月		
November 十一月	14 "	16
December 十二月	17 "	19

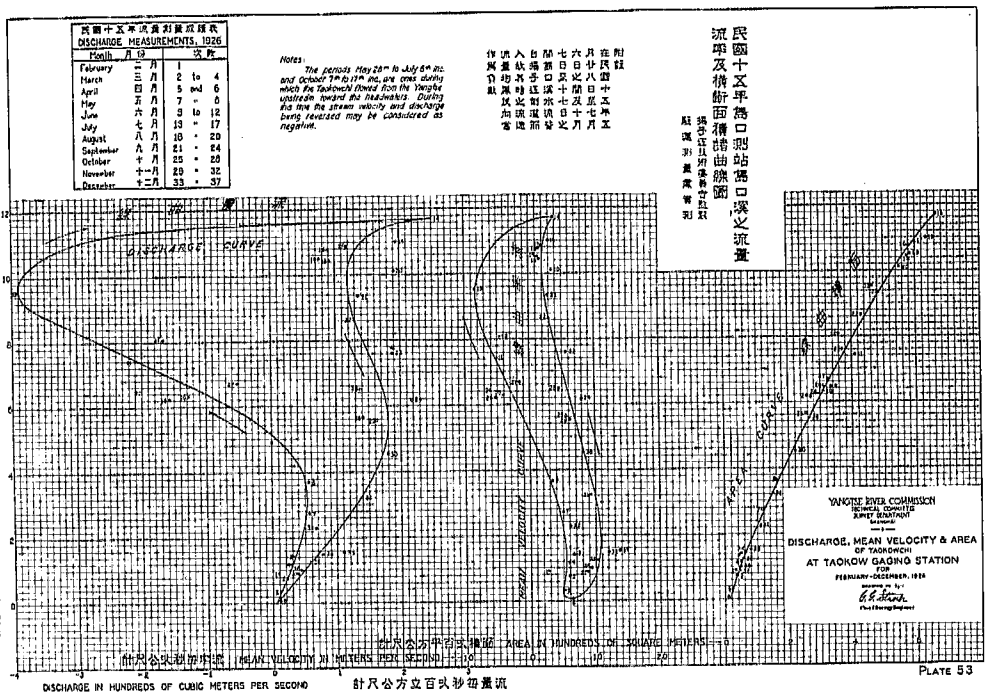
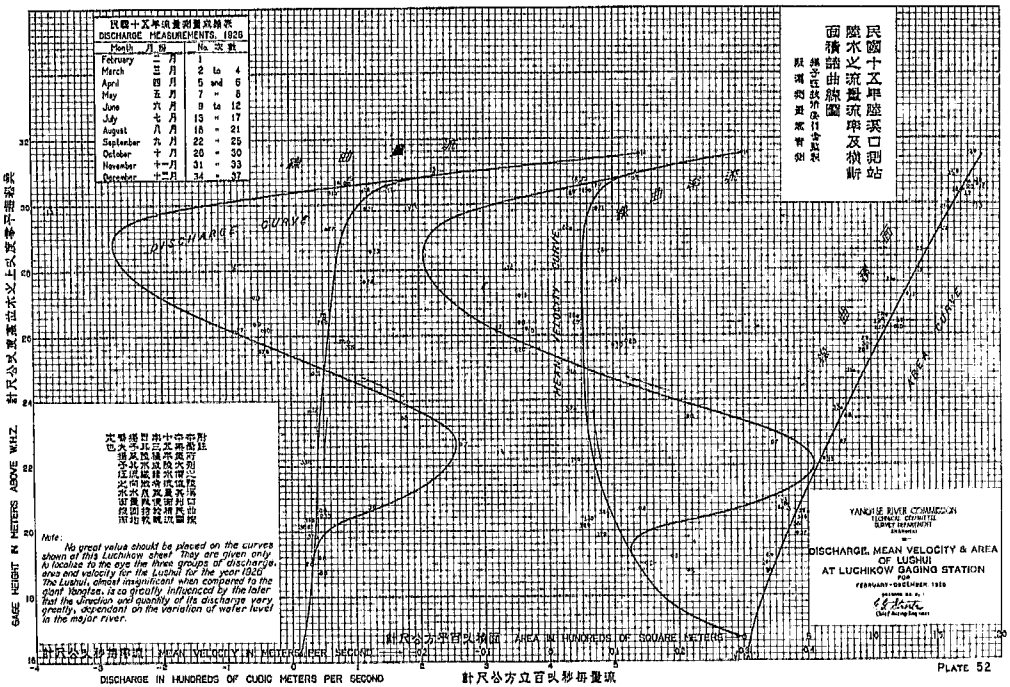
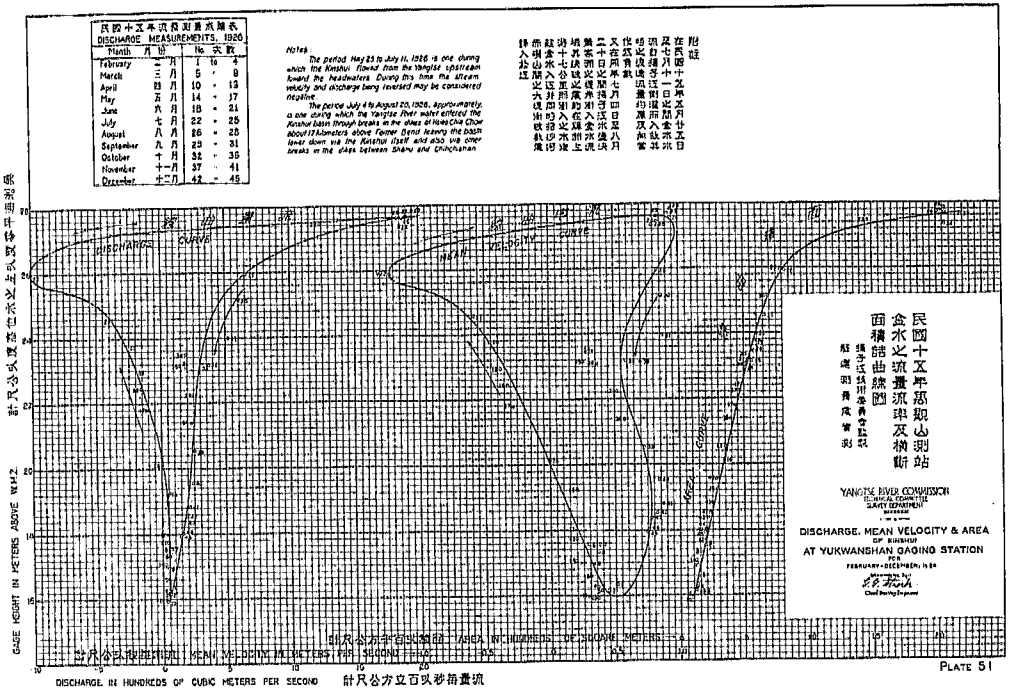

民國十五年揚口測站揚口深水流量流率及橫斷面積曲線圖
DISCHARGE, MEAN VELOCITY & AREA OF TAOKOW GAGING STATION FOR FEBRUARY-DECEMBER, 1926
YANGTSE RIVER COMMISSION TECHNICAL COMMITTEE SURVEY DEPARTMENT
DISCHARGE, MEAN VELOCITY & AREA AT TAOKOW GAGING STATION
DISCHARGE CURVE
MEAN VELOCITY CURVE
AREA CURVE
DISCHARGE IN HUNDREDS OF CUBIC METERS PER SECOND
流量以公方百尺秒計
GAGE HEIGHT IN METERS ABOVE TAOKOW Y.R.C. GAGE ZERO
水尺以公尺表示之上次讀數零尺示口岸高程
DISCHARGE MEASUREMENTS, 1926
民國十五年流量測驗錄
Month 月份 次數
February 二月 1
March 三月 2 to 4
April 四月 5 and 6
May 五月 7 " 8
June 六月 9 to 12
July 七月 13 " 17
August 八月 18 " 20
September 九月 21 " 24
October 十月 25 " 28
November 十一月 29 " 32
December 十二月 33 " 37
Notes:
The periods May 28th to July 5th inc. and October 7th to 17th inc. are times during which the Taokow oil flowed from the Yangtse upstream toward the headwaters. During this time the stream velocity and discharge being reversed may be considered as negative.
附註
在民國十五年五月廿八日至七月六日及十月七日至十七日內揚口深水流量流率及橫斷面積曲線圖係表示揚口油池之油流入揚子江逆流而上時之情形因此時之流量流率均屬負數
AREA IN HUNDREDS OF SQUARE METERS
以百公方平方尺計
MEAN VELOCITY IN METERS PER SECOND
以尺公秒計
G. G. Chow
Chief Engineer

PLATE 53


民國十五年瀘口測站
瀘水之流量流率及橫斷
面積諸曲線圖
DISCHARGE, MEAN VELOCITY & AREA
OF LUSHUI
AT LUCHIKOW GAGING STATION
FOR
FEBRUARY-DECEMBER 1926
YANGTSE RIVER COMMISSION
TECHNICAL COMMITTEE
SURVEY DEPARTMENT
DISCHARGE MEASUREMENTS, 1926
Month 月份
No. 次數
February 二月 1
March 三月 2 to 4
April 四月 5 to 6
May 五月 7 to 8
June 六月 9 to 16
July 七月 13 to 17
August 八月 18 to 21
September 九月 22 to 25
October 十月 26 to 30
November 十一月 31 to 33
December 十二月 34 to 37
Note:
No great value should be placed on the curves shown at this Luchikow sheet. They are given only to localize to the eye the three groups of discharge, area and velocity for the Lushui for the year 1926. The Lushui, almost insignificant when compared to the giant Yangtse, is so greatly influenced by the later that the direction and quantity of its discharge very greatly dependent on the variation of water level in the major river.
DISCHARGE CURVE
MEAN VELOCITY CURVE
AREA CURVE
GAGE HEIGHT IN METERS ABOVE W.H.Z.
DISCHARGE IN HUNDREDS OF CUBIC METERS PER SECOND
AREA IN HUNDREDS OF SQUARE METERS
MEAN VELOCITY IN METERS PER SECOND
PLATE 52



民國十五年流量測表
DISCHARGE MEASUREMENTS, 1926

Month 月份		No. 次數	
February	二月	1 to	4
March	三月	5 "	9
April	四月	10 "	13
May	五月	14 "	17
June	六月	18 "	21
July	七月	22 "	25
August	八月	26 "	28
September	九月	29 "	31
October	十月	32 "	36
November	十一月	37 "	41
December	十二月	42 "	45

Notes

The period May 25 to July 11, 1926 is one during which the Kinshui flowed from the Yangtse upstream toward the headwaters. During this time the stream velocity and discharge being reversed may be considered negative.

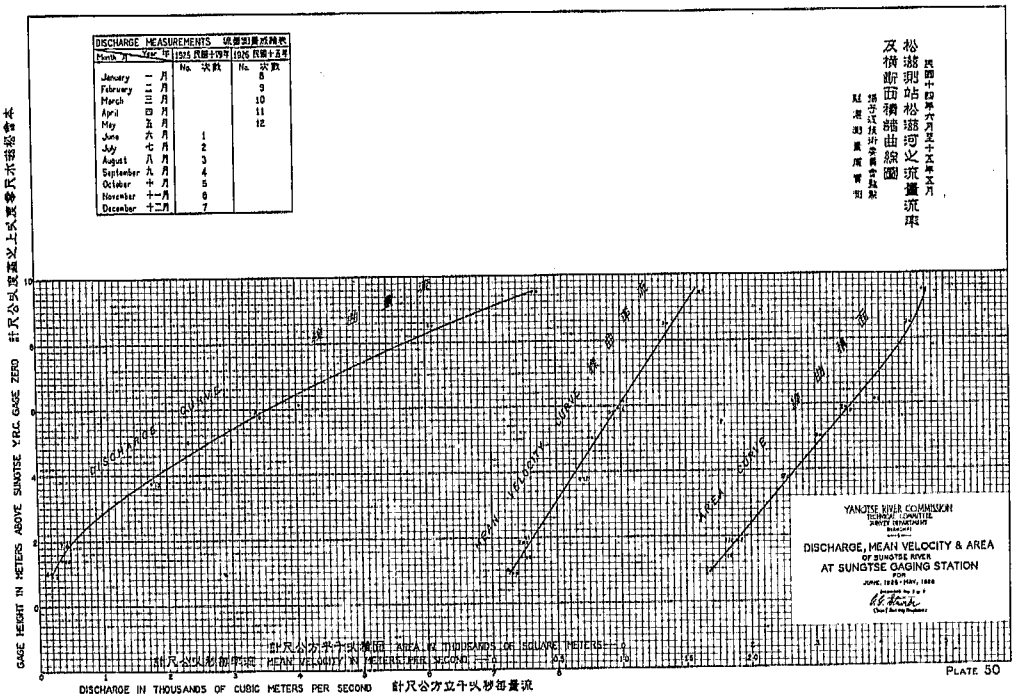
The period July 4 to August 20, 1926, approximately is one during which the Yangtse River water effected the Kinshui basin through breaks in the dikes at Hsing Cha Chow about 13 kilometers above Former Bend leaving the basin lower down via the Kinshui itself and also via other breaks in the dikes between Shahu and Chinchahan

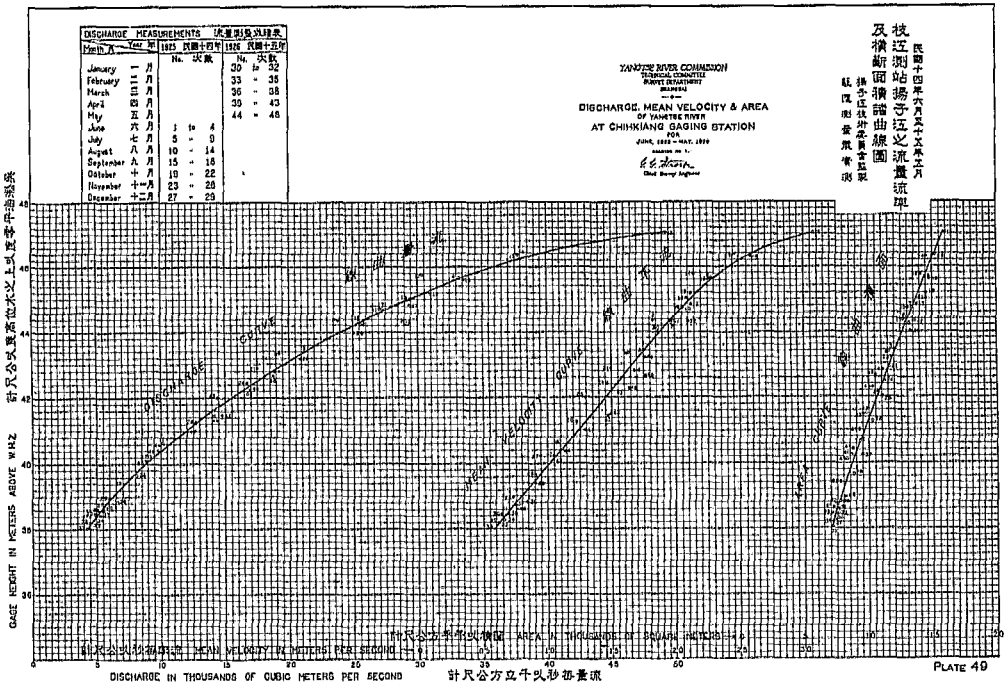
附註

在民國十五年五月廿五日及七月十一日之間金水河流向與平常相反故其流量均應以負數表之

又在陽曆七月四日至八月二十日之間揚子江水漫決興化縣境內之堤岸入金水河流域故流量均應以負數表之

The Peiping Institute of Geology
Chief Engineer


DISCHARGE, MEAN VELOCITY & AREA
OF SUNGTSE RIVER
AT SUNGTSE GAGING STATION
FOR
JUNE, 1925 - MAY, 1926
DISCHARGE CURVE
MEAN VELOCITY CURVE
AREA CURVE
GAGE HEIGHT IN METERS ABOVE SUNGTSE YRC. GAGE ZERO
DISCHARGE IN THOUSANDS OF CUBIC METERS PER SECOND
MEAN VELOCITY IN METERS PER SECOND
AREA IN THOUSANDS OF SQUARE METERS
DISCHARGE MEASUREMENTS
Month 月
Year 年
1925 民國十四年
1926 民國十五年
No. 次數
January 一月
February 二月
March 三月
April 四月
May 五月
June 六月
July 七月
August 八月
September 九月
October 十月
November 十一月
December 十二月
1
2
3
4
5
6
7
8
9
10
11
12
松潭測站松潭河水流量流率及橫斷面積曲線圖
民國十四年六月至十五年五月
YANGTSE RIVER COMMISSION
TECHNICAL COMMITTEE
SURVEY INVESTIGATIONS
PLATE 50


DISCHARGE MEASUREMENTS 流量測驗紀錄表
Month 月 Year 年
1925 民國十四年
1926 民國十五年
No. 次數
January 一月 30 to 32
February 二月 33 " 35
March 三月 36 " 38
April 四月 39 " 43
May 五月 44 " 46
June 六月 1 to 4
July 七月 5 " 9
August 八月 10 " 14
September 九月 15 " 18
October 十月 19 " 22
November 十一月 23 " 26
December 十二月 27 " 29
YANGTZE RIVER COMMISSION
TECHNICAL COMMITTEE
SURVEY DEPARTMENT
HANKOW
DISCHARGE, MEAN VELOCITY & AREA
OF YANGTSE RIVER
AT CHIN-KIANG GAGING STATION
FOR
JUNE, 1925 – MAY, 1926
E. E. Austin
Chief Survey Engineer
揚子江鎮江水文站流量平均速率及橫斷面積曲線圖
民國十四年六月至十五年五月
GAGE HEIGHT IN METERS ABOVE WHAZ
計尺公尺量高位水父上以度零中海淞吳
DISCHARGE IN THOUSANDS OF CUBIC METERS PER SECOND
流量每秒若干立方公尺計尺
MEAN VELOCITY IN METERS PER SECOND
計尺公尺每秒流速率
AREA IN THOUSANDS OF SQUARE METERS
計尺公方平每以積面
CHIN-KIANG
鎮江
PLATE 49

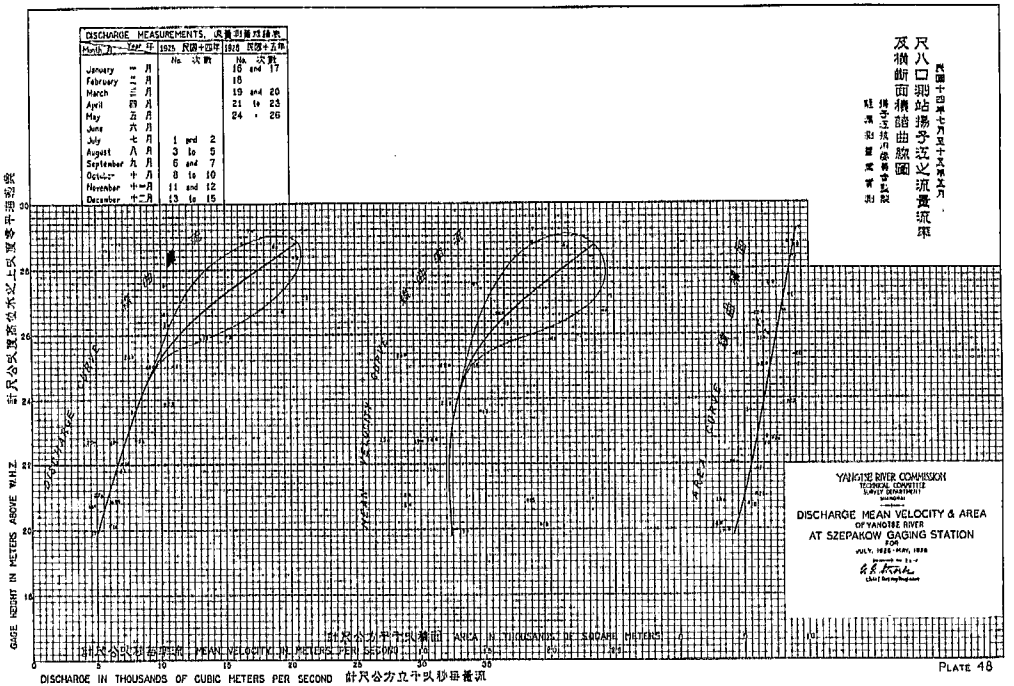
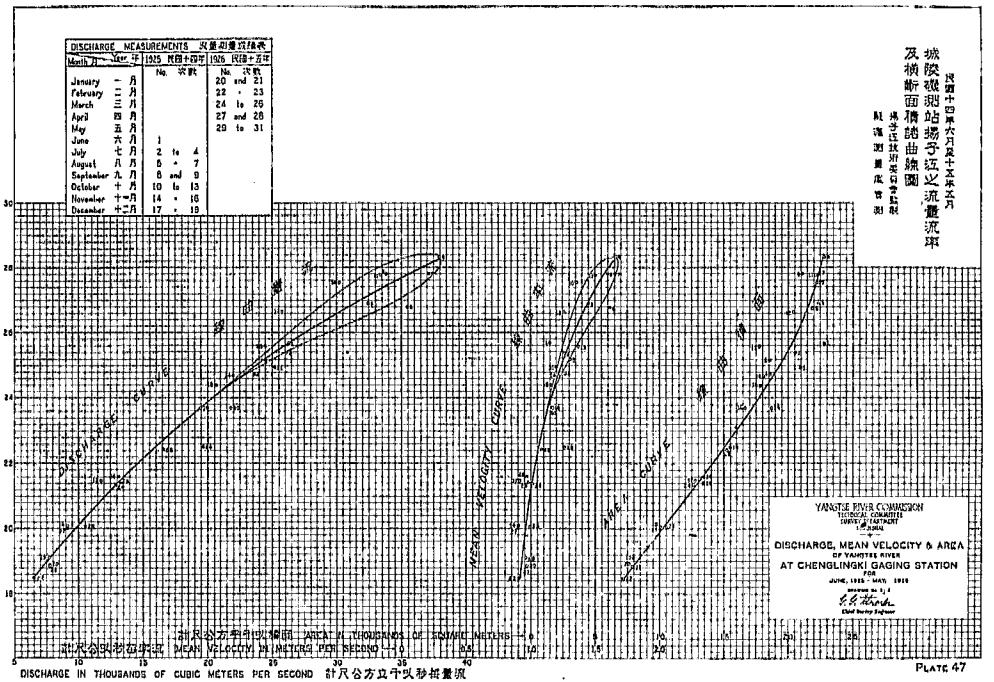

DISCHARGE MEASUREMENTS, 流量測驗次數表
Month 月 Year 年 1925 民國十四年 1926 民國十五年
No. 次數 No. 次數
January 一月 16 and 17
February 二月 16
March 三月 19 and 20
April 四月 21 to 23
May 五月 24 , 26
June 六月
July 七月 1 and 2
August 八月 3 to 5
September 九月 6 and 7
October 十月 8 to 10
November 十一月 11 and 12
December 十二月 13 to 15
揚子江枝江段沙市水文站
YANGTZE RIVER COMMISSION
TECHNICAL COMMITTEE
SURVEY DEPARTMENT
DISCHARGE MEAN VELOCITY & AREA
OF YANGTZE RIVER
AT SZEPAKOW GAGING STATION
FOR
JULY, 1925 - MAY, 1926
GAGE HEIGHT IN METERS ABOVE W.H.Z.
DISCHARGE IN THOUSANDS OF CUBIC METERS PER SECOND
AREA IN THOUSANDS OF SQUARE METERS
MEAN VELOCITY IN METERS PER SECOND

PLATE 48



DISCHARGE MEASUREMENTS 流量測量次數表									
Month 月	Year 年	1925 民國十四年			1926 民國十五年				
		No.	次數		No.	次數			
January	一 月				20	and	21		
February	二 月				22	"	23		
March	三 月				24	to	26		
April	四 月				27	and	28		
May	五 月				29	to	31		
June	六 月	1							
July	七 月	2	to	4					
August	八 月	5	"	7					
September	九 月	8	and	9					
October	十 月	10	to	13					
November	十一月	14	"	16					
December	十二月	17	"	19					

民國十四年六月及十五年五月

城陵磯測站場子江之流量流率及橫斷面積諸曲線圖

揚子江技術委員會製

航海測量處管測

YANGTSE RIVER COMMISSION
TECHNICAL COMMITTEE
SURVEY DEPARTMENT
1926
DISCHARGE, MEAN VELOCITY & AREA
OF YANGTSE RIVER
AT CHENGLINGKI GAGING STATION
FOR
JUNE, 1925 - MAY, 1926
Chief Survey Engineer

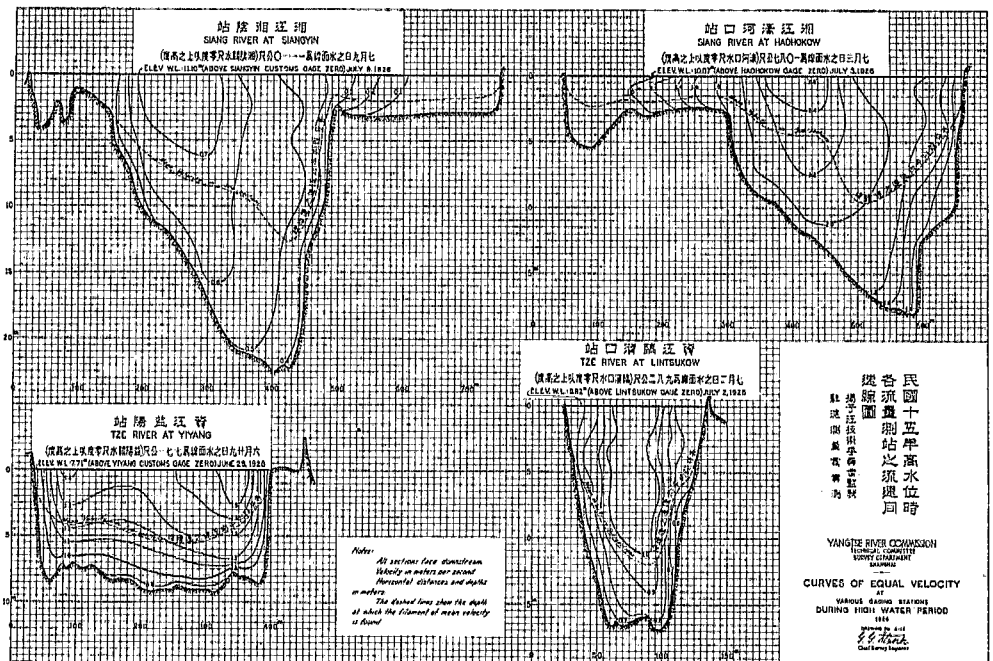

站陰湘江湘
SIANG RIVER AT SIANGYIN
(假高之上吼度零只水關陰湘只台〇一一一一萬時面水之日九月七
(ELEV WL-113.0"ABOVE SIANGYIN CUSTOMS GAGE ZERO)JULY 9,1926
站口河漢江湘
SIANG RIVER AT HANKOW
(假高之上吼度零只水口河湘)只台七八〇一萬時面水之日三月七
(ELEV.WL-108.7"ABOVE HANKOW GAGE ZERO) JULY 3,1926
站口洞縣江揖
TZE RIVER AT LINTSUKOW
(假高之上吼度零只水口洞縣)只台二八九九萬時面水之日二月七
(ELEV.WL-128.2"ABOVE LINTSUKOW GAUGE ZERO)JULY 2,1925
站陽益江揖
TZE RIVER AT YIYANG
(假高之上吼度零只水關陰益只台一七七萬時面水之日九廿月六
(ELEV.WL-7.71"ABOVE YIYANG CUSTOMS GAGE ZERO)JUNE 29,1926
Notes:
All sections face downstream.
Velocity in meters per second.
Horizontal distances and depths in meters.
The dashed lines show the depth at which the filament of mean velocity is found.
民國十五年高水位時各流量測站之流速同線圖
揚子江技術委員會製
YANGTZE RIVER COMMISSION
TECHNICAL COMMITTEE
SURVEY DEPARTMENT
HANKOW
CURVES OF EQUAL VELOCITY
AT
VARIOUS GAGING STATIONS
DURING HIGH WATER PERIOD
1926
DRAWN BY A.M.
E.R. Hsia
Chief Survey Engineer

PLATE 46

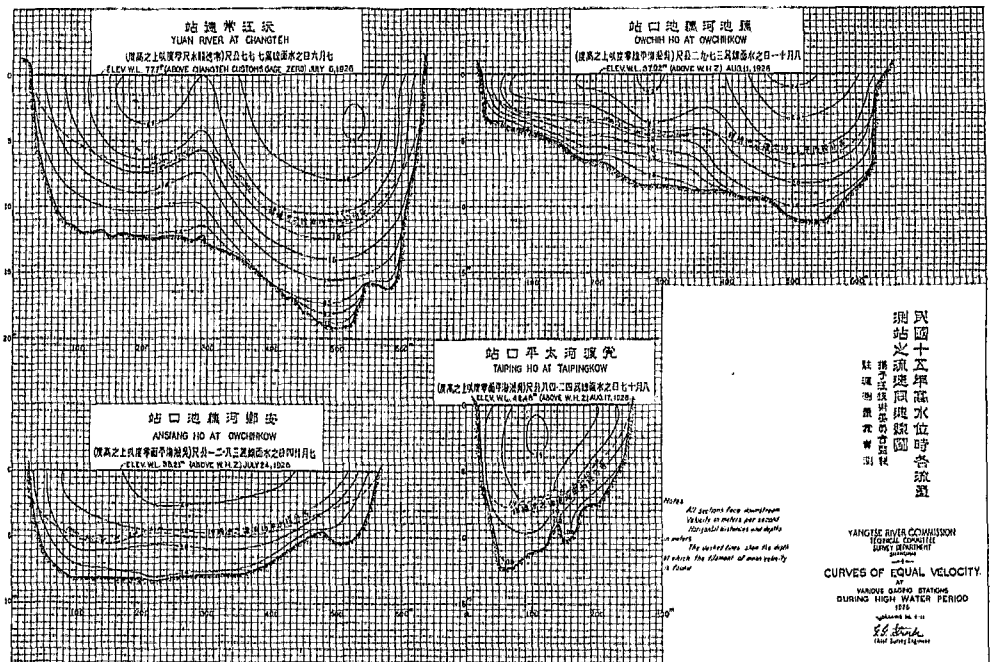

沅江常德站
YUAN RIVER AT CHANGTEH
(洪高之上現度零尺水標常德關尺只五七七厘位置水之日六月七
ELEV. W.L. 777' (ABOVE CHANGTEH CUSTOMS GAGE ZERO) JULY 6, 1926
沱口地點河地鎮
OWCHIH HO AT OWCHIHKOW
(洪高之上現度零段平海拔尺只五二九七三英呎零水之日八月十一
ELEV. W.L. 570.2' (ABOVE W.H.Z.) AUG. 11, 1926
太平口附近河段
TAIPING HO AT TAIPINGKOW
(洪高之上現度零段平海拔尺只八〇二四英呎零水之日七月十八
ELEV. W.L. 484.8' (ABOVE W.H.Z.) AUG. 17, 1926
安鄉河地點口站
ANSIANG HO AT OWCHIHKOW
(洪高之上現度零面平海拔尺只五一二九三英呎零水之日四月七
ELEV. W.L. 883' (ABOVE W.H.Z.) JULY 24, 1926
Notes
All sections face downstream
Velocity in meters per second
Horizontal distances and depths in meters.
The dotted lines show the depth at which the element of mean velocity is found
民國十五年洪水位時各流速測站之流速同線圖
揚子江水利委員會製
駐滬測量處繪製
YANGTSE RIVER COMMISSION
TECHNICAL COMMITTEE
SURVEY DEPARTMENT
CURVES OF EQUAL VELOCITY
AT
VARIOUS GAGING STATIONS
DURING HIGH WATER PERIOD
1926
E.R. Gish
Chief Survey Engineer

PLATE 45

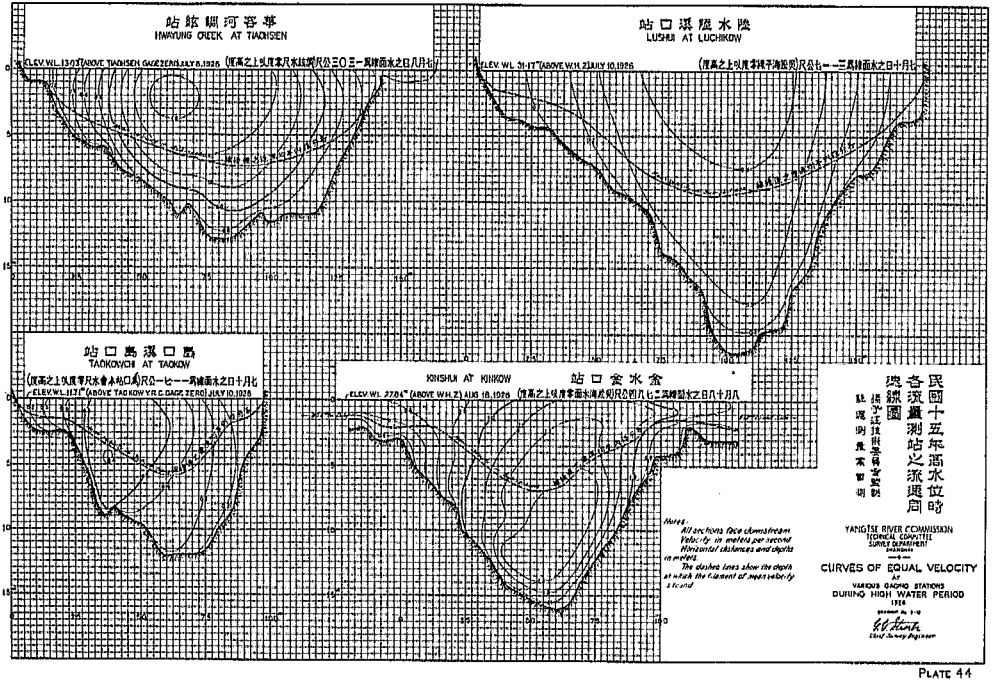

華容河關站
HWAYUNG CREEK AT TIACHSEN
ELEV WL. 130.5'(ABOVE TIACHSEN GAGE ZERO) JULY 8, 1926 (標高之上以標準尺水位關尺公三〇三一英特面水之日月八日)
陸水羅口站
LUSHUI AT LUCHKOW
ELEV WL. 31-11"(ABOVE W.H. 2) JULY 10, 1926 (標高之上以標準海拔關尺公七一二三英特面水之日十月七日)
羅口鳥溪口站
TAOKOW(S) AT TAOKOW
(標高之上以標準尺水會水站(口)關尺公七一七一一英特面水之日十月七
ELEV WL. 157.1'(ABOVE TAO KOW Y.R.C. GAGE ZERO) JULY 10, 1926
金水金口站
KINSHUI AT KINKOW
ELEV WL. 77.84'(ABOVE W.H. 2) AUG. 18, 1926 (標高之上以標準海拔關尺公四九七二英特面水之日八月八
Notes
All sections face downstream
Velocity in meters per second
Horizontal distances and depths in meters
The dashed lines show the depth at which the filament of mean velocity is found
民國十五年高水位時各流量測站之流速同線圖
說明
YANGTSE RIVER COMMISSION
TECHNICAL COMMITTEE
SURVEY DEPARTMENT
CURVES OF EQUAL VELOCITY
AT
VARIOUS GAGING STATIONS
DURING HIGH WATER PERIOD
1926
Chief Survey Engineer

PLATE 44

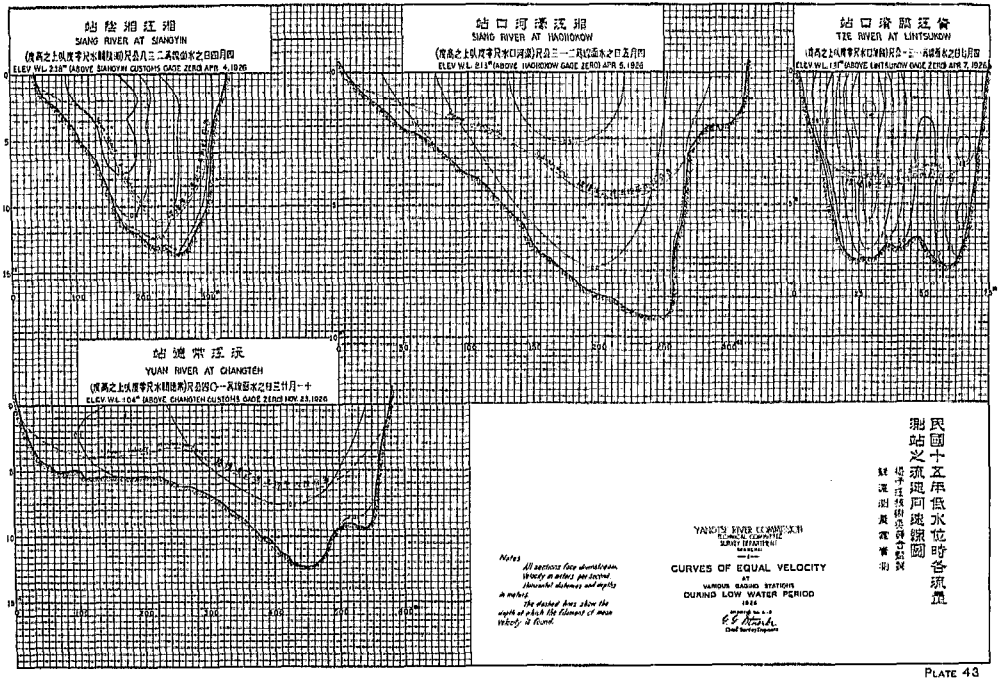

站陰湘江湘
SIANG RIVER AT SIANGYIN
(湘高之上以度零尺水關湘陰只总八三二高程海水之四月四
ELEV W.L. 238' (ABOVE SIANGYIN CUSTOMS GAGE ZERO APR. 4, 1926
站口河漢沅湘
SIANG RIVER AT HANKOW
(湘高之上以度零尺水口河漢只总三一二高程溫水之口五月四
ELEV W.L. 813' (ABOVE HANKOW GAGE ZERO) APR. 5, 1926
站口瑞臨江資
TZE RIVER AT LINTSUKOW
(湘高之上以度零尺水口瑞臨只总一三一高程海水之四七月四
ELEV W.L. 137' (ABOVE LINTSUKOW GAGE ZERO) APR. 7, 1926
站德常瑗沅
YUAN RIVER AT CHANGTEH
(湘高之上以度零尺水關德常只总四〇一高程海水之九三廿一十
ELEV W.L. 104' (ABOVE CHANGTEH CUSTOMS GAGE ZERO) NOV. 23, 1926
Notes
All sections face downstream.
Velocity in meters per second.
Horizontal distances and depths in meters.
The dashed lines show the depth at which the filament of mean velocity is found.
YANGTSE RIVER COMMISSION
TECHNICAL COMMITTEE
SURVEY DEPARTMENT
CURVES OF EQUAL VELOCITY
AT
VARIOUS GAGING STATIONS
DURING LOW WATER PERIOD
1926
E.E. Rush
Chief Survey Engineer
民國十五年低水位時各斷面
測站之流速同速綫圖
揚子江技術委員會勘測
測量部長薩蘭署

PLATE 43

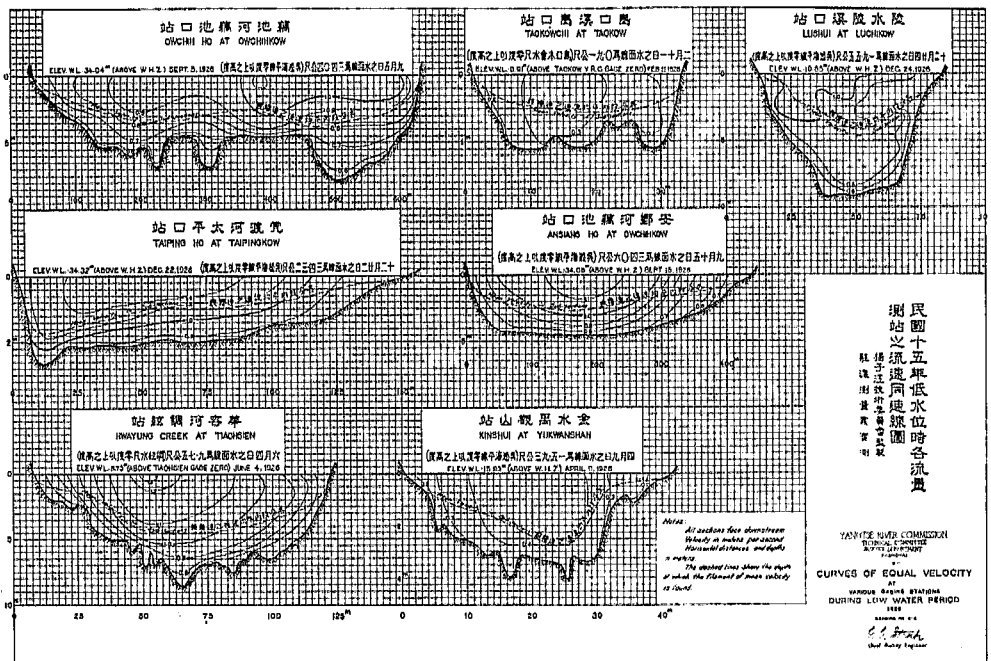
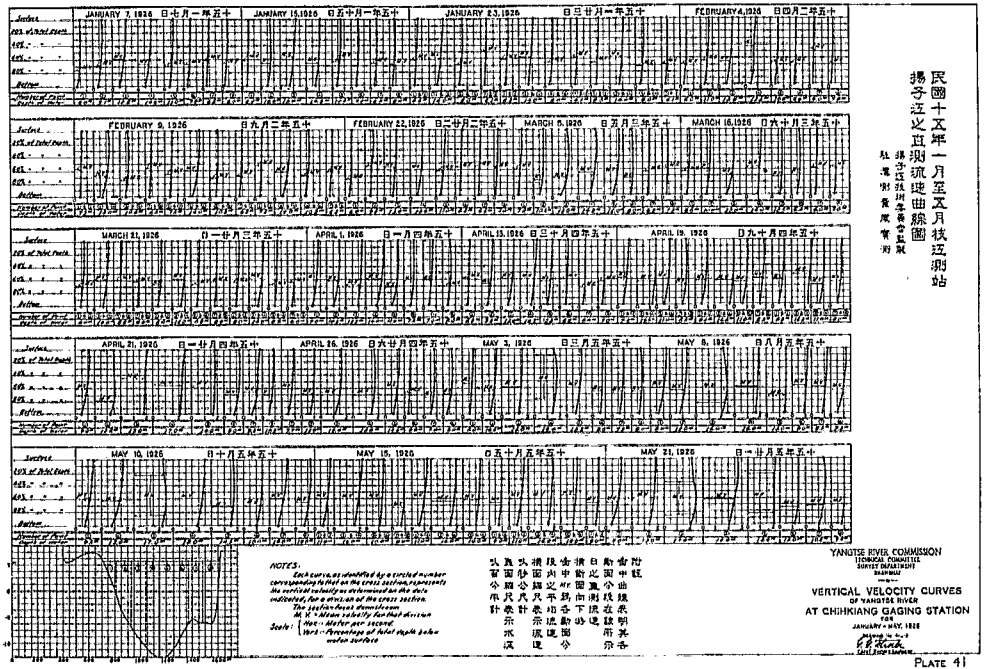

站口池鎮河池鎮
OWCHIH HO AT OWCHIHKOW
站口萬塚口萬
TAOKOWCHI AT TAOKOW
站口綠陂水陂
LUSHUI AT LUCHIKOW
站口平太河瑤兜
TAIPING HO AT TAIPINGKOW
站口池鎮河鄭安
ANSIANG HO AT OWCHIHKOW
站銅鑼河容華
HWAYUNG CREEK AT TIAOHSIEN
站山靚黑水魚
KINSHUI AT YUKWANSHAN
民國十五年低水位時各流量
測站之流速同速線圖
揚子江水利委員會製
YANGTSE RIVER COMMISSION
CURVES OF EQUAL VELOCITY
AT
VARIOUS GAUGE STATIONS
DURING LOW WATER PERIOD
1926

PLATE 42



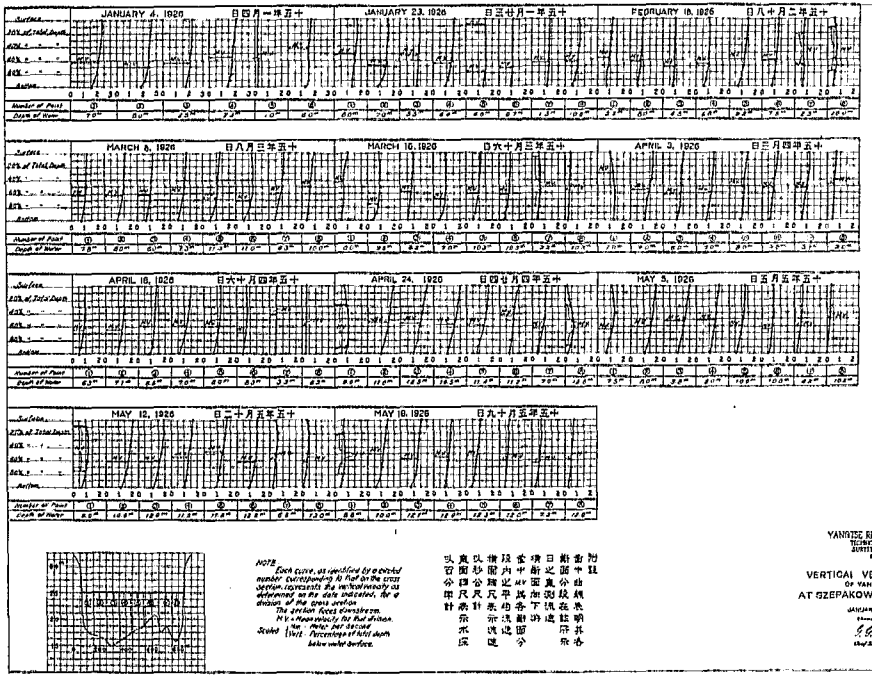
民國十五年一月至五月枝江測站
揚子江垂直測流速曲線圖

揚子江流速以每秒公尺為單位
縱橫線表示水深

PLATE 41

民國十五年一月至五月尺八口測站
揚子江之直測流速曲線圖

揚子江技術委員會製製
製圖者 黃炎周



NOTE
Each curve, as identified by a circled number, corresponds to that on the cross section, represents the velocity at a determined point on the date indicated, for a division of the cross section.
The section faces downstream.
Vv = Mean velocity for that division.
Scales { Vel. - Meter per second.
Vert. - Percentage of total depth below water surface.

附註
畫曲線表明各點在斷面之位置日期及分段平均流速
橫線下面之數字表明各點在斷面之位置
縱線表明各點流速
橫線表明水深百分率
縱線表明流速每秒鐘公尺數

YANGTZE RIVER COMMISSION
TECHNICAL COMMITTEE
SURVEY DEPARTMENT
SHANGHAI

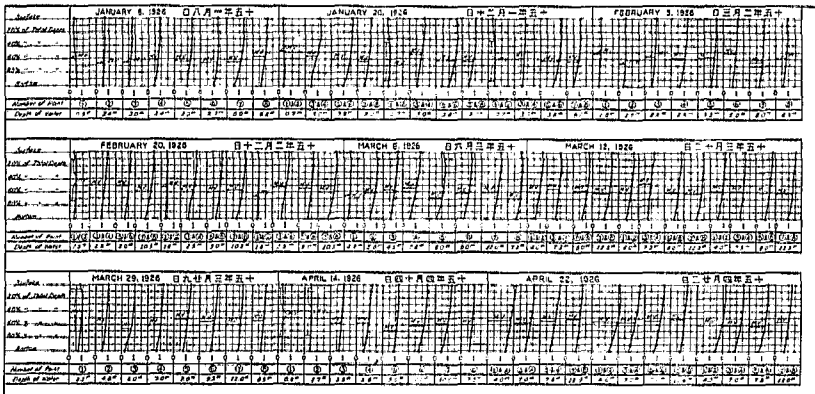
VERTICAL VELOCITY CURVES
OF YANGTZE RIVER
AT SZEPAKOW GAGING STATION
FOR
JANUARY - MAY, 1926

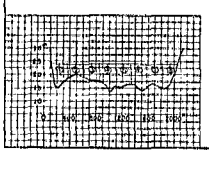
Drawn by Chi T
Chief Draughtsman

PLATE 40

民國十五年一月至五月城陵磯測站揚子江水面測流速曲線圖

揚子江水利委員會製





NOTE

Each curve, as identified by a record number corresponding to that on the cross section, represents the vertical velocity as determined on the date indicated, for a division of the cross section.

The inches trace downstream.

MV = mean velocity for that division in foot-meter per second

Scales: 1 inch = Percentage of full depth below water surface.

圖註

各曲線以記錄號數表明之與橫斷面圖上之號數相應表示各該日期各該分段之垂直流速

橫尺表順流之距離

縱尺表垂線上各點之水深

MV = 該分段之平均流速每秒公尺

YANGTSE RIVER COMMISSION
TECHNICAL COMMITTEE
SURVEY DEPARTMENT
SHANGHAI

VERTICAL VELOCITY CURVES
OF YANGTSE RIVER
AT CHENGLINGKI GAGING STATION
FOR
JANUARY - MAY - 1926

DRAWN by H.Y.
H.F. Morris
Chief Survey Engineer

PLATE 39

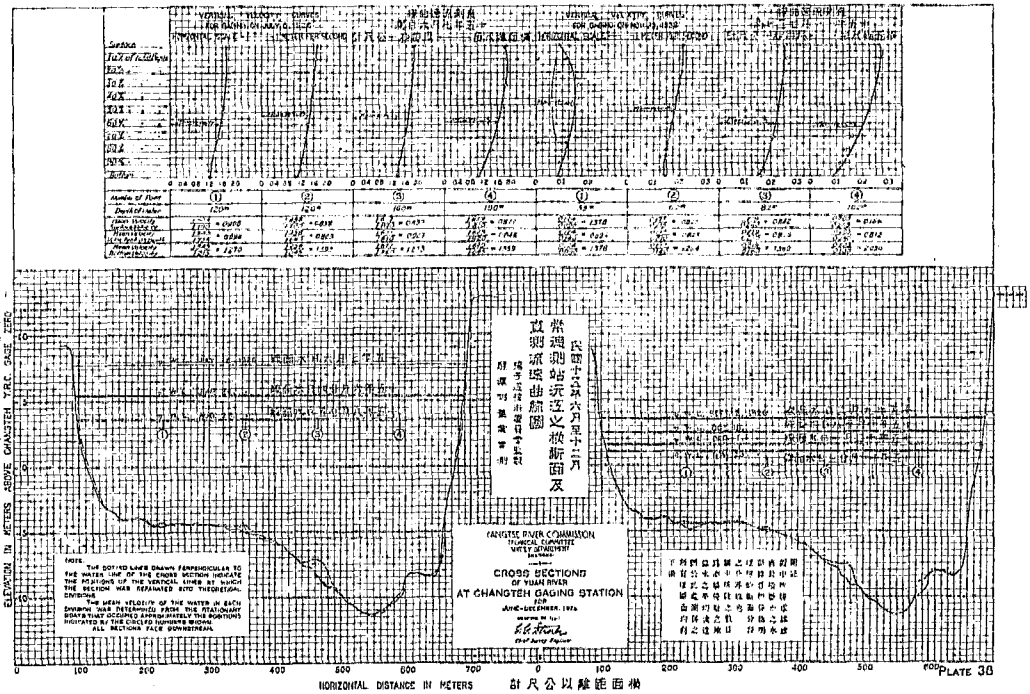
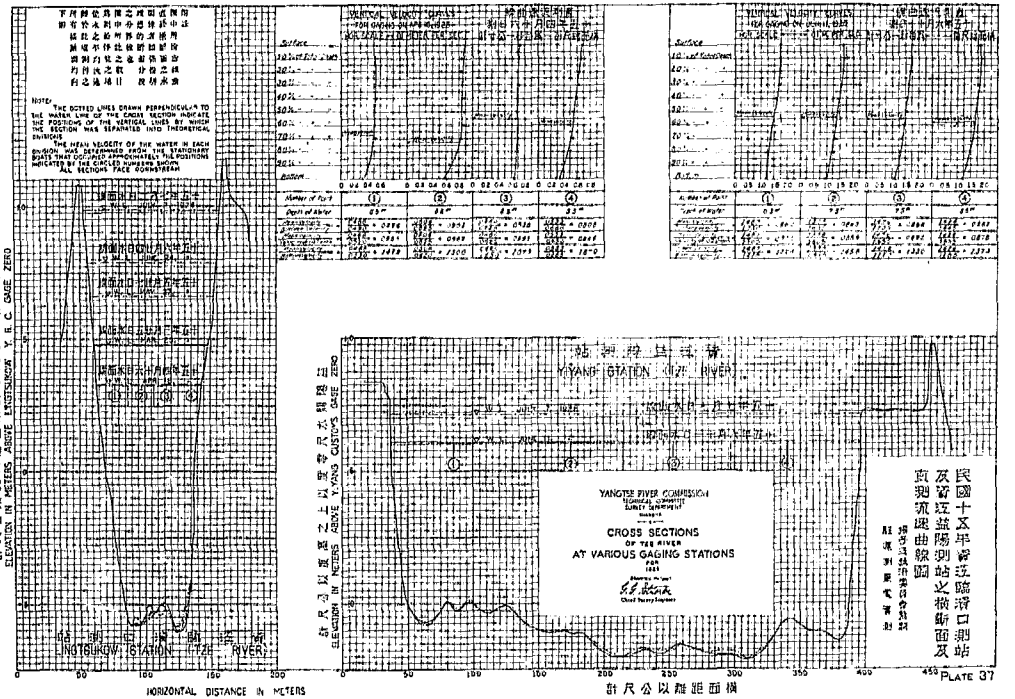
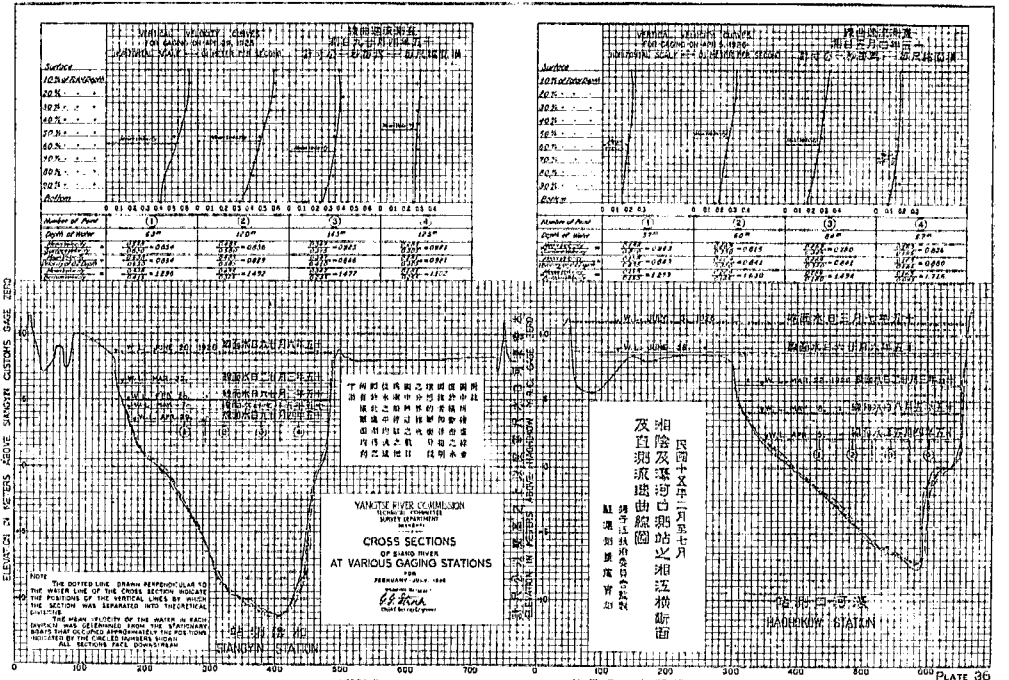

CROSS SECTIONS
OF YUAN RIVER
AT CHANGTEH GAGING STATION
FOR
JUNE-DECEMBER, 1934
YANGTSE RIVER COMMISSION
TECHNICAL COMMITTEE
WATER DEPARTMENT
NOTE
THE DOTTED LINES DRAWN PERPENDICULAR TO THE WATER LINE OF THE CROSS SECTION INDICATE THE POSITIONS OF THE VERTICAL LINES BY WHICH THE SECTION WAS REGARDED AS A THEORETICAL DIVISION.
THE MEAN VELOCITY OF THE WATER IN EACH DIVISION WAS DETERMINED FROM THE STATIONARY BOATS THAT OCCUPIED APPROXIMATELY THE POSITIONS INDICATED BY THE CIRCLED NUMBERS ABOVE.
ALL SECTIONS FACE DOWNSTREAM.
ELEVATION IN METERS ABOVE CHANGTEH YRC. GAGE ZERO
HORIZONTAL DISTANCE IN METERS

PLATE 38


NOTE:
THE DOTTED LINES DRAWN PERPENDICULAR TO THE WATER LINE OF THE CROSS SECTION INDICATE THE POSITIONS OF THE VERTICAL LINES BY WHICH THE SECTION WAS SEPARATED INTO THEORETICAL DIVISIONS.
THE MEAN VELOCITY OF THE WATER IN EACH DIVISION WAS DETERMINED FROM THE STATIONARY BOATS THAT OCCUPIED APPROXIMATELY THE POSITIONS INDICATED BY THE CIRCLED NUMBERS SHOWN ALL SECTIONS FACE DOWNSTREAM
ELEVATION IN METERS ABOVE NOTSUKOW Y.R.C. GAGE ZERO
HORIZONTAL DISTANCE IN METERS
NOTSUKOW STATION ON THE YANGTZE RIVER
ELEVATION IN METERS ABOVE YICHANG CUSTOM'S GAGE ZERO
YANGTSE RIVER COMMISSION
TECHNICAL COMMITTEE
SURVEY DEPARTMENT
CROSS SECTIONS
OF THE RIVER
AT VARIOUS GAGING STATIONS
1935
Chief Survey Engineer
HORIZONTAL DISTANCE IN METERS
PLATE 37


YANGTSE RIVER COMMISSION
TECHNICAL COMMITTEE
SURVEY DEPARTMENT
CROSS SECTIONS
OF SIANG RIVER
AT VARIOUS GAGING STATIONS
FOR
FEBRUARY - JULY - 1926
NOTE
THE DOTTED LINE DRAWN PERPENDICULAR TO THE WATER LINE OF THE CROSS SECTION INDICATE THE POSITIONS OF THE VERTICAL LINES BY WHICH THE SECTION WAS SEPARATED INTO THEORETICAL DIVISIONS.
THE MEAN VELOCITY OF THE WATER IN EACH DIVISION WAS DETERMINED FROM THE STATIONARY BOATS THAT OCCUPIED APPROXIMATELY THE POSITIONS INDICATED BY THE CIRCLED NUMBERS SHOWN.
ALL SECTIONS FACE DOWNSTREAM
SIANGYIN STATION
HENGSHAN STATION
HORIZONTAL DISTANCE IN METERS
ELEVATION IN METERS ABOVE SIANGYIN CUSTOMS GAGE ZERO
PLATE 36

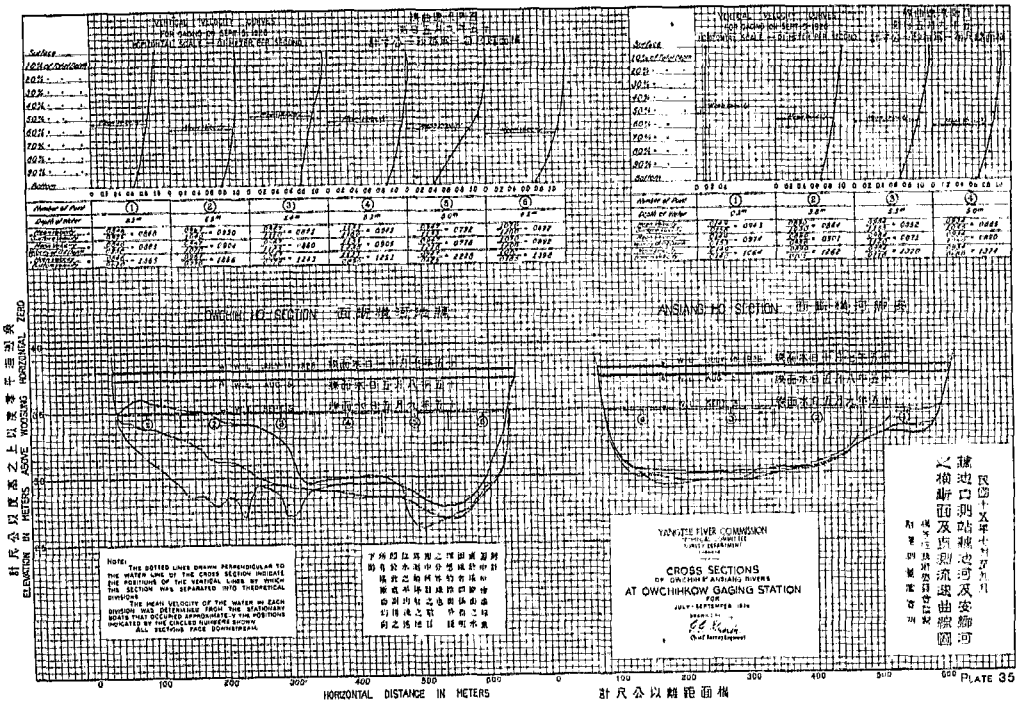
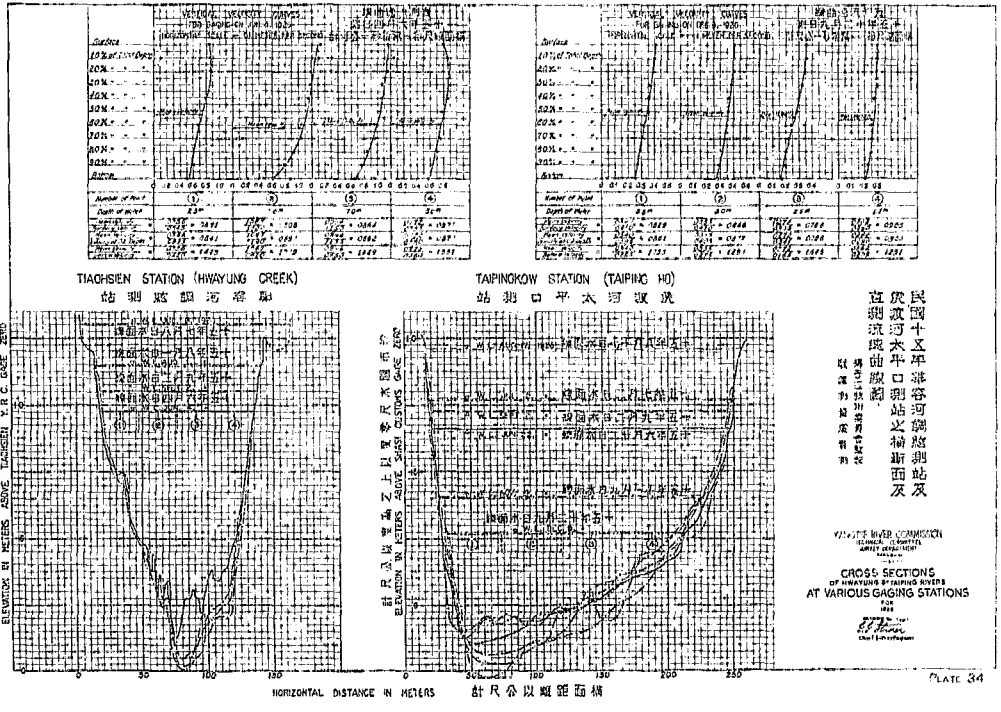

VERTICAL VELOCITY CURVES
FOR GAGING ON SEPT. 5 1924
VERTICAL SCALE = 1 METER PER SECOND
HORIZONTAL SCALE = 5 METER PER METER
Surface
10% of Total Depth
20%
30%
40%
50%
60%
70%
80%
90%
Bottom
Number of Point
Depth of Water
Mean Velocity
Area of Cross Section
Discharge
DAIKOW TO SECTION
ANSIANG TO SECTION
HORIZONTAL ZERO
ELEVATION IN METERS ABOVE WOOSUNG
HORIZONTAL DISTANCE IN METERS
NOTE!
THE DOTTED LINES DRAWN PERPENDICULAR TO THE WATER LINE OF THE CROSS SECTION INDICATE THE POSITIONS OF THE VERTICAL LINES BY WHICH THIS SECTION WAS SEPARATED INTO THEORETICAL DIVISIONS.
THE MEAN VELOCITY OF THE WATER IN EACH DIVISION WAS DETERMINED FROM THE STATIONARY BOATS THAT OCCURED APPROXIMATELY IN THE POSITIONS INDICATED BY THE CIRCLED NUMBERS SHOWN.
ALL SECTIONS FACE DOWNSTREAM.
YANGTZE RIVER COMMISSION
CROSS SECTIONS
AT OWCHIHKOW GAGING STATION
FOR
JULY - SEPTEMBER 1924

PLATE 35


TIAOHSIEN STATION (HWAYUNG CREEK)
站測路調河容華
TAIPINKOW STATION (TAIPING HO)
站測口平太河埠
民國十五年華容河調鈔測站及
民國河太平口測站之橫斷面及
流速與流量曲線圖
YANGTZE RIVER COMMISSION
CROSS SECTIONS
OF HWAYUNG & TAIPING RIVERS
AT VARIOUS GAGING STATIONS
PLATE 34
ELEVATION IN METERS ABOVE TAOHSIEN Y.R.C. GAGE ZERO
計尺公以處站口平太河埠
ELEVATION IN METERS ABOVE SHASI CUSTOMS GAGE ZERO
HORIZONTAL DISTANCE IN METERS
計尺公以離距面橫

YANGTZE RIVER COMMISSION
TECHNICAL COMMITTEE
SURVEY DEPARTMENT
Shanghai

CROSS SECTIONS OF TAOKOWCHI AT TAOKOW GAGING STATION

FOR
FEBRUARY-DECEMBER, 1929

Submitted by [illegible]
Chief Surveyor

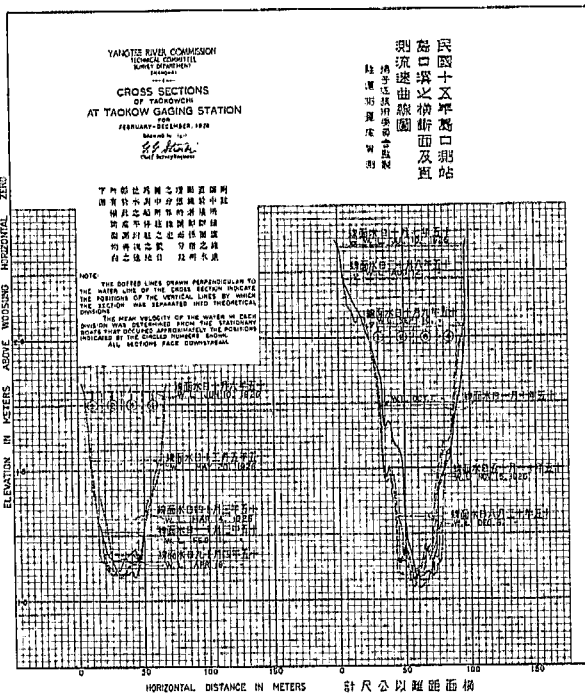
民國十六年陶口測站
陶口堰之橫斷面及其
測流速曲線圖

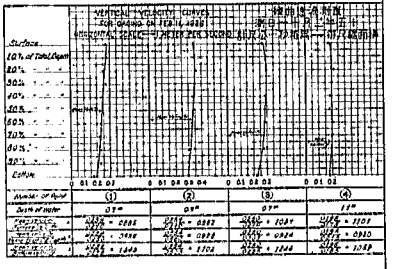
揚子江水利委員會技術委員會
測量部製呈

NOTE:
THE DOTTED LINES DRAWN PERPENDICULAR TO THE WATER LINE OF THE CROSS SECTION INDICATE THE POSITIONS OF THE VERTICAL LINES BY WHICH THE SECTION WAS SEPARATED INTO THEORETICAL DIVISIONS.
THE MEAN VELOCITY OF THE WATER IN EACH DIVISION WAS DETERMINED FROM THE STATIONARY BOATS THAT OCCUPIED APPROXIMATELY THE POSITIONS INDICATED BY THE ENCIRCLED NUMBERS SHOWN.
ALL SECTIONS FACE DOWNSTREAM.

ELEVATION IN METERS ABOVE WUSUNG ZERO
高程以公尺計吳淞零點以上

HORIZONTAL DISTANCE IN METERS
橫面距離以公尺計





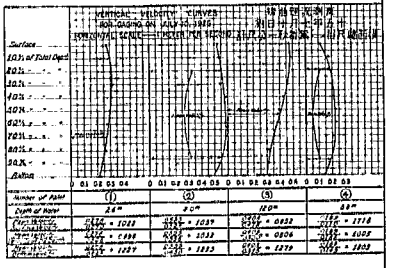
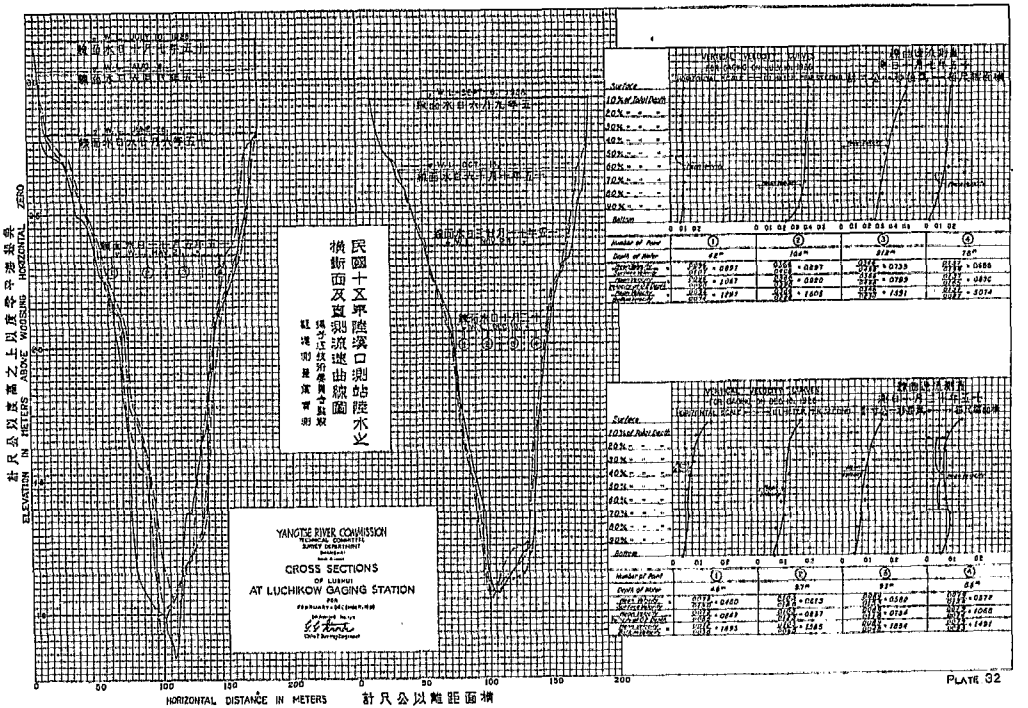
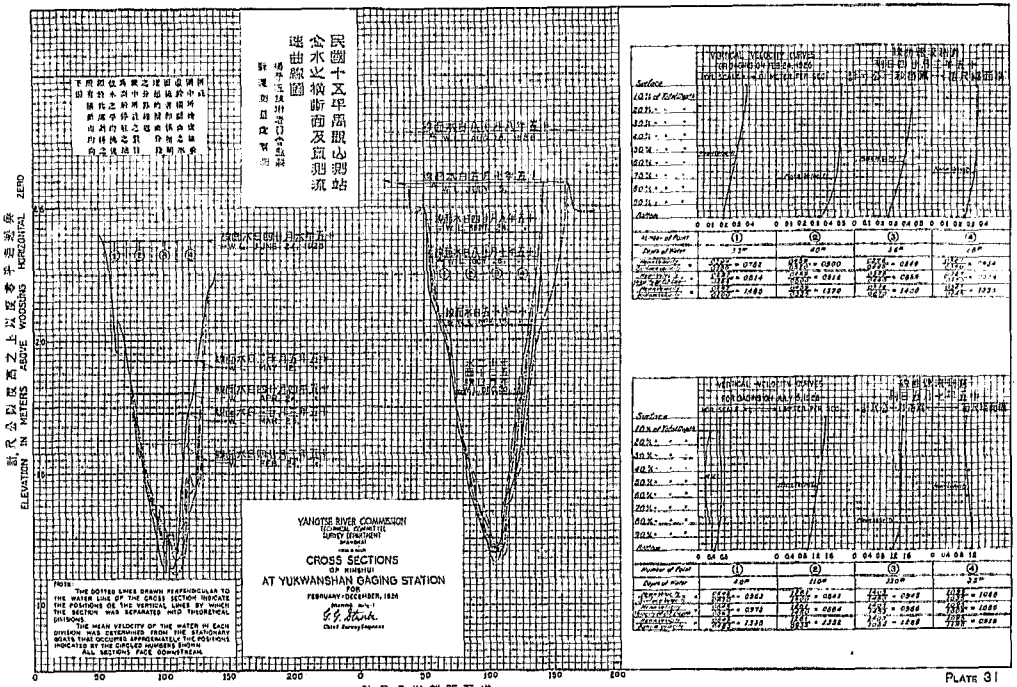
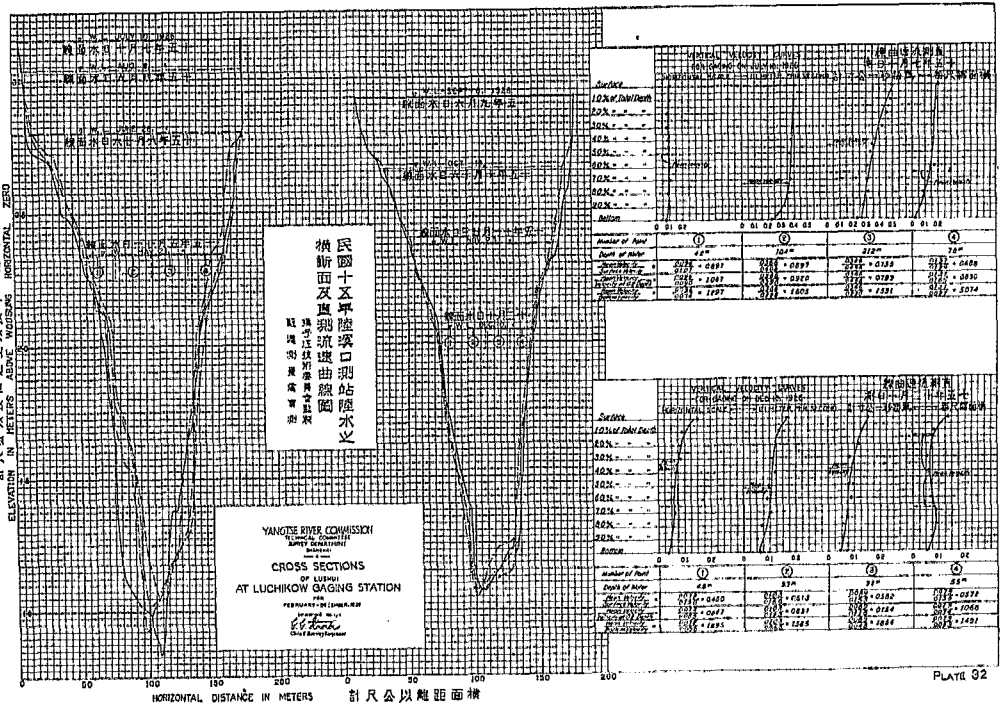


PLATE 33


民國十五年蘆溝橋水文
橫斷面及直線流速曲線圖
YANGTSE RIVER COMMISSION
CROSS SECTIONS
AT LUCHIKOW GAGING STATION
ELEVATION IN METERS ABOVE WOOSUNG HORIZONTAL ZERO
HORIZONTAL DISTANCE IN METERS
計尺公以離距面橫
PLATE 32


民國十五年漢口附近揚子江水位斷面及流速曲線圖
YANGTSE RIVER COMMISSION
TECHNICAL COMMITTEE
SURVEY DEPARTMENT
Hankow
CROSS SECTIONS
OF HSIAOSHIUI
AT YUKWANSHAN GAGING STATION
FOR
FEBRUARY-DECEMBER, 1926
Chief Survey Engineer
NOTE:
THE DOTTED LINES DRAWN PERPENDICULAR TO THE WATER LINE OF THE CROSS SECTION INDICATE THE POSITIONS OF THE VERTICAL LINES BY WHICH THE SECTION WAS SEPARATED INTO THEORETICAL DIVISIONS.
THE MEAN VELOCITY OF THE WATER IN EACH DIVISION WAS DETERMINED FROM THE STANDARD VELOCITY CURVE OCCURRING APPROXIMATELY THE POSITIONS INDICATED BY THE CIRCLED NUMBERS SHOWN.
ALL SECTIONS FACE DOWNSTREAM.
VERTICAL VELOCITY CURVES
FOR SOUNDINGS MADE BY FIELDS-1926
VERTICAL VELOCITY CURVES
FOR SOUNDINGS MADE BY FIELDS-1926
ELEVATION IN METERS ABOVE WOOSUNG HORIZONTAL ZERO
HORIZONTAL DISTANCE IN METERS
PLATE 31


民國十五年陸溪口測站陸水文
橫斷面及直測流速曲線圖
YANGTSE RIVER COMMISSION
CROSS SECTIONS
OF LUSHUI
AT LUCHIKOW GAGING STATION
FEBRUARY-DECEMBER 1926
E.G. Tsou
Chief Survey Engineer
ELEVATION IN METERS ABOVE WUSONG ZERO
HORIZONTAL DISTANCE IN METERS
計尺公以離距面橫
PLATE 32

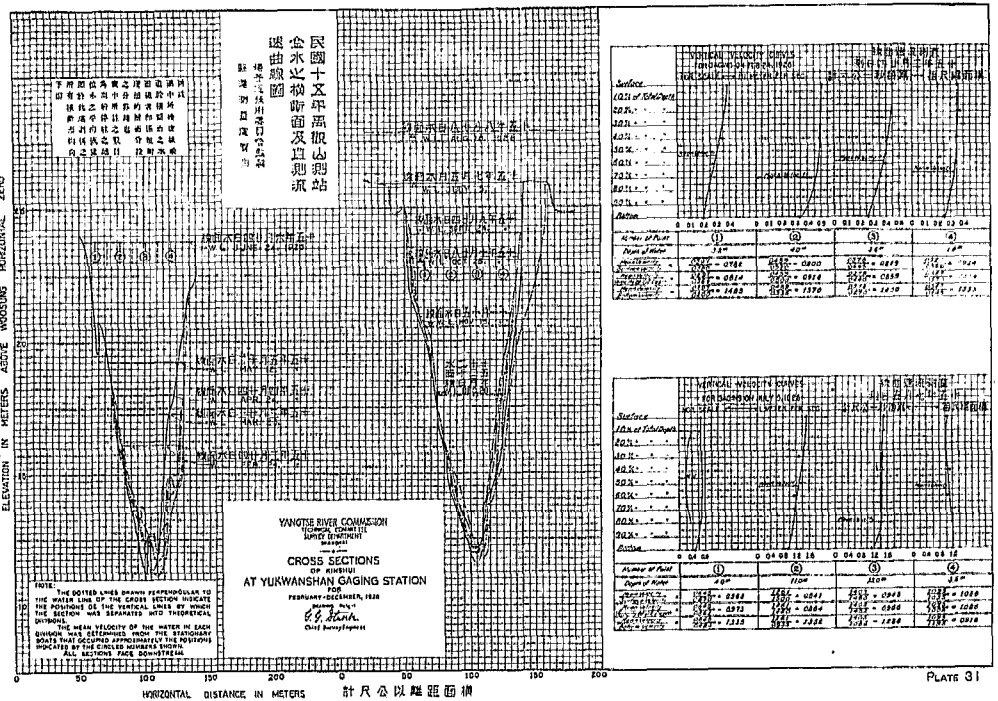
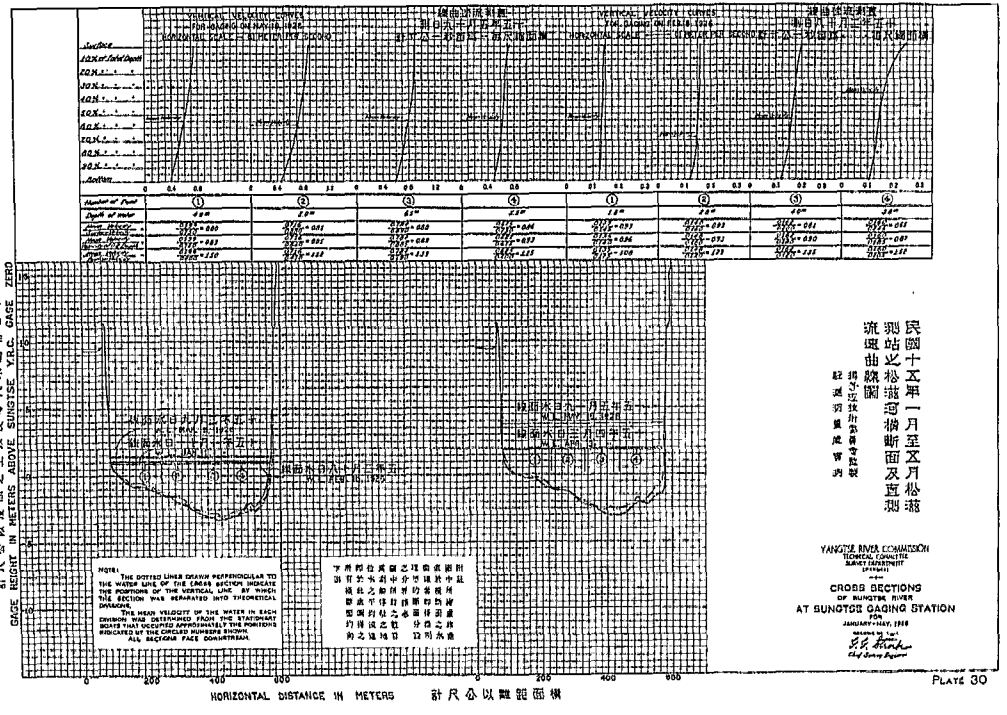
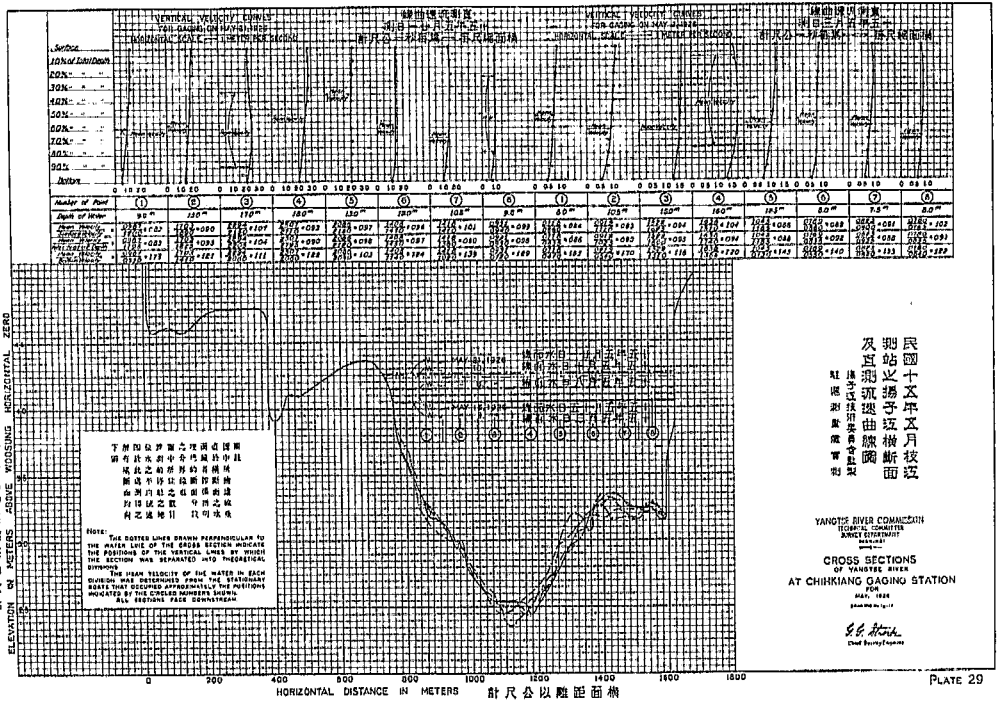

民國十五年萬縣山洲站
金水河斷面及流速
曲線圖
YANGTSE RIVER COMMISSION
TECHNICAL COMMITTEE
SURVEY DEPARTMENT
CROSS SECTIONS
OF KIUSHIU
AT YUKWANSHAN GAGING STATION
FOR
FEBRUARY-DECEMBER, 1926
NOTE:
THE DOTTED LINES DRAWN PERPENDICULAR TO THE WATER LINE OF THE CROSS SECTION INDICATE THE POSITIONS OF THE VERTICAL LINES BY WHICH THE SECTION WAS SEPARATED INTO THEORETICAL DIVISIONS.
THE MEAN VELOCITY OF THE WATER IN EACH DIVISION WAS DETERMINED FROM THE STATIONARY BOATS THAT OCCUPIED APPROXIMATELY THE POSITIONS INDICATED BY THE CIRCLED NUMBERS SHOWN.
ALL SECTIONS FACE DOWNSTREAM.
ELEVATION IN METERS ABOVE WOOSUNG ZERO
HORIZONTAL DISTANCE IN METERS
VERTICAL VELOCITY CURVES
FOR DISCHARGE OF 14,000 C.F.S.
VERTICAL VELOCITY CURVES
FOR DISCHARGE OF 14,000 C.F.S.

PLATE 31


民國十五年一月至五月松滋河橫斷面及直測流速曲線圖
揚子江技術委員會測量
YANGTSE RIVER COMMISSION
TECHNICAL CONSULTE
SURVEY DEPARTMENT
CROSS SECTIONS
OF SUNGTSE RIVER
AT SUNGTSE GAGING STATION
FOR
JANUARY-MAY, 1926
Chief Survey Engineer
PLATE 30
NOTE:
THE DOTTED LINES DRAWN PERPENDICULAR TO THE WATER LINE OF THE CROSS SECTION INDICATE THE PORTIONS OF THE VERTICAL LINE BY WHICH THE SECTION WAS SEPARATED INTO THEORETICAL DIVISIONS.
THE MEAN VELOCITY OF THE WATER IN EACH DIVISION WAS DETERMINED FROM THE STATIONARY BOATS THAT OCCUPIED APPROXIMATELY THE POSITIONS INDICATED BY THE CIRCLED NUMBERS SHOWN.
ALL SECTIONS FACE DOWNSTREAM.
GAGE HEIGHT IN METERS ABOVE SUNGTSE Y.R.C. GAGE ZERO
HORIZONTAL DISTANCE IN METERS



民國十五年五月鎮江
測站之揚子江橫斷面
及直測流速曲線圖

揚子江技術委員會監製
駐滬測量處實測

YANGTSE RIVER COMMISSION
TECHNICAL COMMITTEE
SURVEY DEPARTMENT

CROSS SECTIONS
OF YANGTSE RIVER
AT CHINKIANG GAGING STATION
FOR
MAY, 1926

G. G. Stroebe
Chief Survey Engineer

[illegible]

NOTE:

THE DOTTED LINES DRAWN PERPENDICULAR TO THE WATER LINE OF THE CROSS SECTION INDICATE THE POSITIONS OF THE VERTICAL LINES BY WHICH THE SECTION WAS SEPARATED INTO THEORETICAL DIVISIONS.

THE MEAN VELOCITY OF THE WATER IN EACH DIVISION WAS DETERMINED FROM THE STATIONARY BOATS THAT OCCUPIED APPROXIMATELY THE POSITIONS INDICATED BY THE CIRCLED NUMBERS SHOWN.

ALL SECTIONS FACE DOWNSTREAM.

PLATE 29

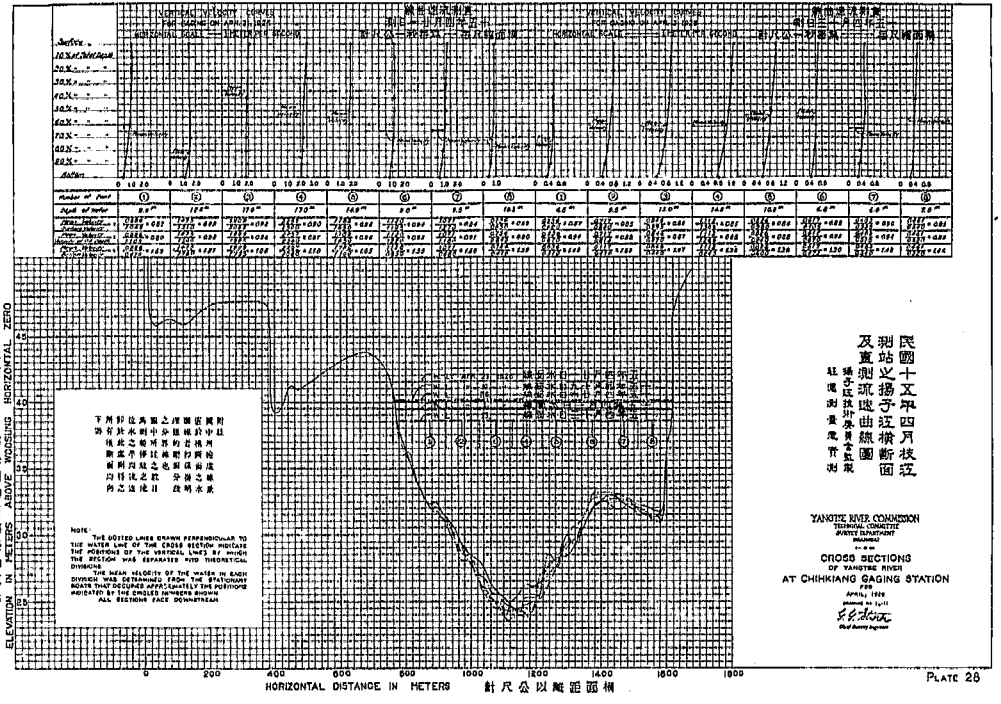
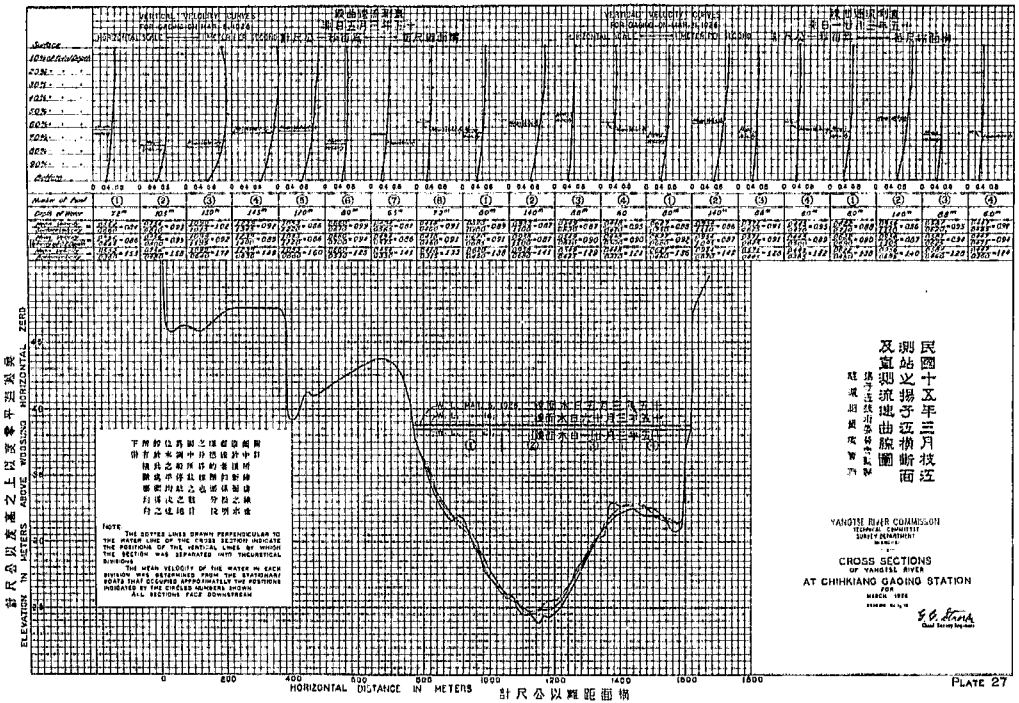
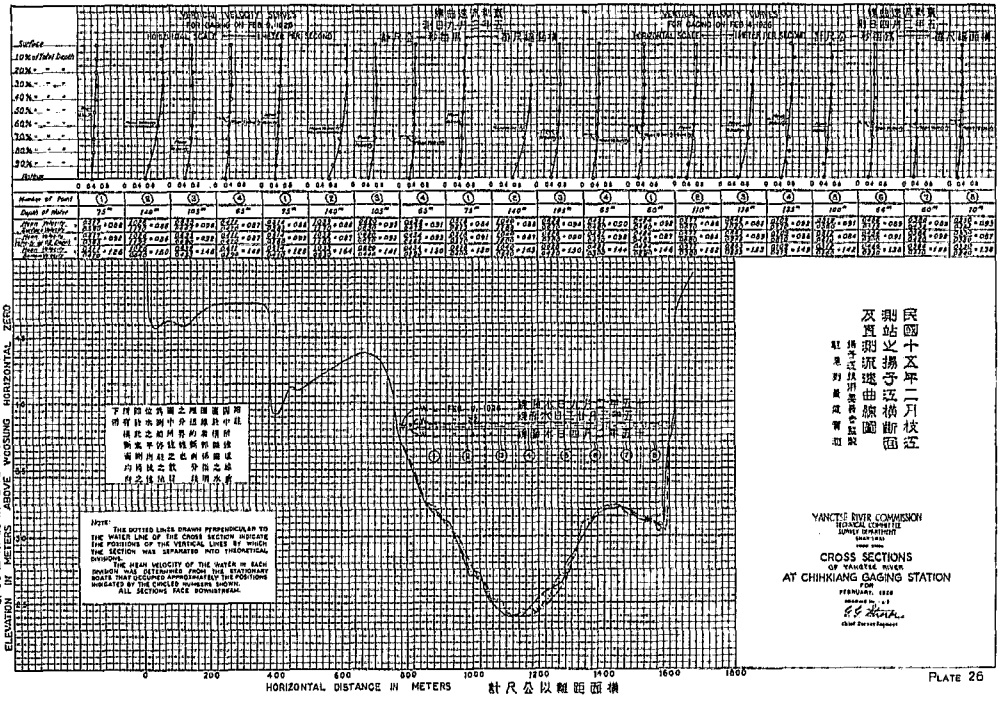

VERTICAL VELOCITY CURVES
THE SECTION OF APRIL 1927
HORIZONTAL SCALE — VELOCITY IN FEET
VERTICAL VELOCITY CURVES
HORIZONTAL SCALE — VELOCITY IN FEET
Surface
10% of Total Depth
20% " " "
30% " " "
40% " " "
50% " " "
60% " " "
70% " " "
80% " " "
Bottom
Number of Point
Depth of Water
Mean Velocity
Discharge per second
Mean Velocity
Discharge per second
Note:
THE DOTTED LINES DRAWN PERPENDICULAR TO THE WATER LINE OF THE CROSS SECTION INDICATE THE POSITIONS OF THE VERTICAL LINES BY WHICH THE SECTION WAS SEPARATED INTO THEORETICAL DIVISIONS
THE MEAN VELOCITY OF THE WATER IN EACH DIVISION WAS OBTAINED FROM THE STATIONARY BOATS THAT OCCUPIED APPROXIMATELY THE POSITIONS INDICATED BY THE ENDLESS TAPERS SHOWN
ALL SECTIONS FACE DOWNSTREAM
ELEVATION IN METERS ABOVE WOOSUNG HORIZONTAL ZERO
針尺公以度高之上淞吳零平海黃
HORIZONTAL DISTANCE IN METERS
針尺公以離距面橫
0
200
400
600
800
1000
1200
1400
1600
1800
YANGTZE RIVER COMMISSION
TECHNICAL CONSULTIVE
SURVEY DEPARTMENT
SHANGHAI
CROSS SECTIONS
OF YANGTZE RIVER
AT CHIHKIANG GAGING STATION
FOR
April, 1928
Chief Survey Engineer
民國十五年四月枝江站之揚子江橫斷面及實測流速曲線圖
揚子江枝江水文測站
施測量度實測

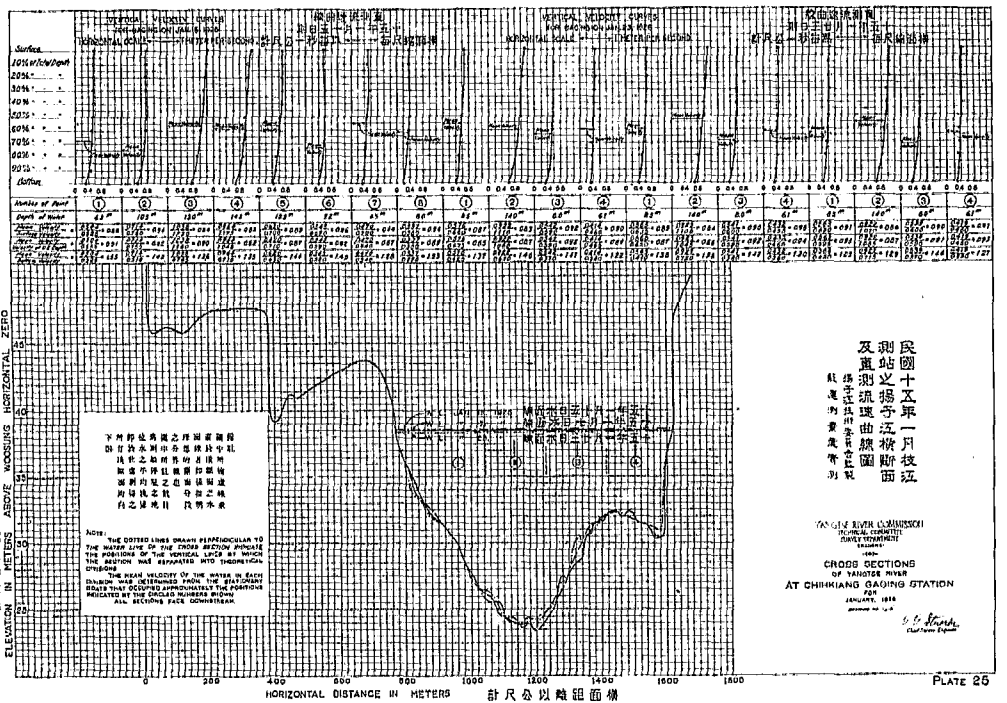
PLATE 28

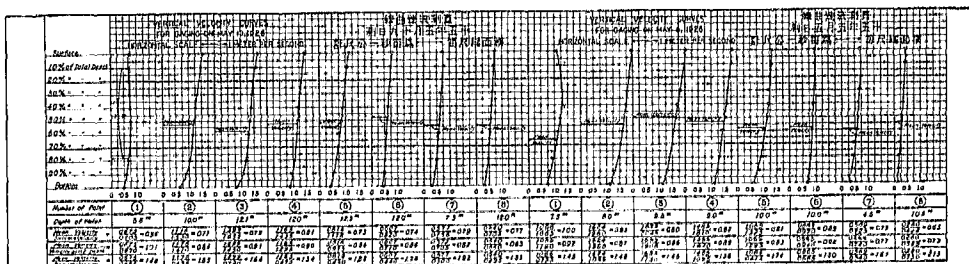

VERTICAL VELOCITY CURVES
FOR GAGING ON MAR. 31, 1926
HORIZONTAL SCALE ——— VERTICAL SCALE ———
Surface
10% of Total Depth
20%
40%
60%
80%
Bottom
Meter at Point
Depth of Water
Mean Velocity
Mean of Two Velocities
Mean Velocity of Section
0 0.4 0.8
(1) (2) (3) (4) (5) (6) (7) (8) (1) (2) (3) (4) (1) (2) (3) (4) (1) (2) (3) (4)
72m 101m 120m 141m 120m 80m 61m 73m 80m 140m 88m 60m 140m 84m 80m 80m 140m 88m 80m
0.715 +.024 0.773 +.023 0.729 -.104 0.735 +.094 0.755 +.058 0.655 -.093 0.622 -.241 0.555 +.091 0.615 -.089 0.733 -.087 0.669 +.087 0.774 +.035 0.629 -.080 0.734 +.091 0.772 +.035 0.685 -.080 0.815 +.036 0.832 +.035 0.749 -.094
0.740 0.798 0.625 0.814 0.813 0.748 0.381 0.646 0.704 0.820 0.756 0.809 0.709 0.825 0.715 0.765 0.851 0.867 0.655
0.715 +.086 0.773 +.085 0.729 -.092 0.735 +.089 0.755 +.066 0.655 -.094 0.622 -.056 0.555 +.081 0.615 -.091 0.733 -.087 0.669 +.090 0.774 +.090 0.629 -.087 0.734 +.091 0.772 +.090 0.685 -.082 0.815 +.087 0.832 +.084 0.749 -.084
0.800 0.844 0.683 0.852 0.821 0.761 0.435 0.701 0.636 0.814 0.759 0.864 0.716 0.825 0.806 0.767 0.902 0.916 0.833
0.715 +.123 0.773 +.128 0.729 -.219 0.735 +.128 0.755 +.160 0.655 -.123 0.622 -.141 0.555 +.133 0.615 -.138 0.733 -.127 0.669 +.121 0.774 +.126 0.629 -.116 0.734 +.120 0.772 +.122 0.685 -.120 0.815 +.140 0.832 +.120 0.749 -.114
0.838 0.871 0.510 0.889 0.776 0.668 0.481 0.696 0.697 0.853 0.792 0.790 0.755 0.848 0.849 0.787 0.942 0.952 0.864
0.789 0.838 0.606 0.852 0.803 0.726 0.432 0.681 0.679 0.829 0.769 0.821 0.727 0.833 0.823 0.773 0.898 0.912 0.817
ELEVATION IN METERS ABOVE WOOSUNG HORIZONTAL ZERO
HORIZONTAL DISTANCE IN METERS
0 200 400 500 600 1000 1200 1400 1600 1800
NOTE
THE DOTTED LINES DRAWN PERPENDICULAR TO THE WATER LINE OF THE CROSS SECTION INDICATE THE POSITIONS OF THE VERTICAL LINES BY WHICH THE SECTION WAS SEPARATED INTO THEORETICAL DIVISIONS
THE MEAN VELOCITY OF THE WATER IN EACH DIVISION WAS DETERMINED FROM THE STATIONARY BOATS THAT OCCUPIED APPROXIMATELY THE POSITIONS INDICATED BY THE CIRCLED NUMBERS SHOWN
ALL SECTIONS FACE DOWNSTREAM
W. L. MAR. 31, 1926
YANGTSE RIVER COMMISSION
TECHNICAL COMMITTEE
SURVEY DEPARTMENT
CROSS SECTIONS
OF YANGTSE RIVER
AT CHIHKIANG GAGING STATION
FOR
MARCH 1926
E. E. Hsieh
Chief Survey Engineer
PLATE 27

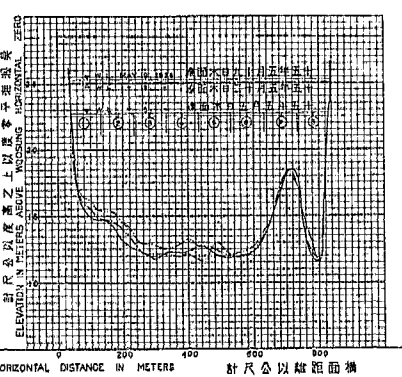


民國十五年二月枝江測站之揚子江橫斷面及真測流速曲線圖

PLATE 26


VERTICAL VELOCITY CURVES
FOR EACH ONE FOOT IN DEPTH
HORIZONTAL SCALE — ONE METER
Surface
10% V'city/Depth
20%
30%
40%
50%
60%
70%
80%
90%
Bottom
Number of Point
Depth of Water
Mean Velocity
Surface Velocity
Bottom Velocity
Ratio Mean
Ratio Surface
Ratio Bottom
NOTE:
THE DOTTED LINES DRAWN PERPENDICULAR TO THE WATER LINE OF THE CROSS SECTION INDICATE THE POSITIONS OF THE VERTICAL LINES BY WHICH THE SECTION WAS SEPARATED INTO THEORETICAL DIVISIONS.
SUBJECTS—THE MEAN VELOCITY OF THE WATER IN EACH DIVISION DETERMINED FROM THE CURRENT ROSES THAT OCCUPIED APPROXIMATELY THE POSITIONS INDICATED BY THE CIRCLED NUMBERS SHOWN.
ALL SECTIONS FACE DOWNSTREAM.
YANGTZE RIVER COMMISSION
TECHNICAL COMMITTEE
SURVEY DEPARTMENT
CROSS SECTIONS
OF YANGTSE RIVER
AT CHINKIANG GAGING STATION
FOR
JANUARY, 1918
ELEVATION IN METERS ABOVE MOSSMAN HORIZONTAL ZERO
HORIZONTAL DISTANCE IN METERS
PLATE 25





NOTE: THE DOTTED LINES DRAWN PERPENDICULAR TO THE WATER LINE OF THE CROSS SECTION INDICATE THE POSITIONS OF THE VERTICAL LINES BY WHICH THE SECTION WAS SEPARATED INTO THEORETICAL DIVISIONS.

THE MEAN VELOCITY OF THE WATER IN EACH DIVISION WAS REFERRED FROM THE STANDARD PLATE THAT DEPICTED APPROXIMATELY THE MIDPOINTS INDICATED BY THE CIRCLED NUMERALS SHOWN.
ALL SECTIONS FACE DOWNSTREAM

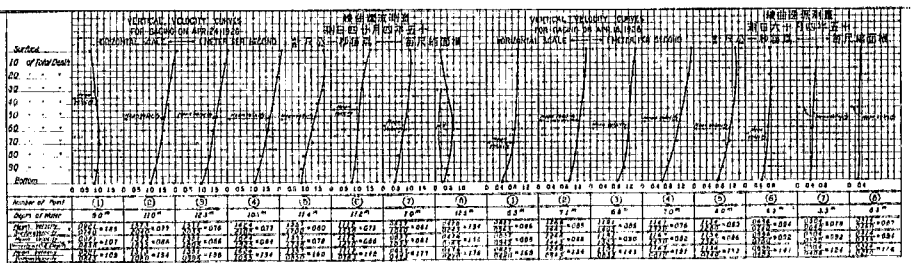
註所示虛線係與橫斷面水平線垂直表示橫斷面分為若干部份之界線
橫斷面各部份之平均流速係參照標準圖而得標準圖係表示各部份中心點之位置

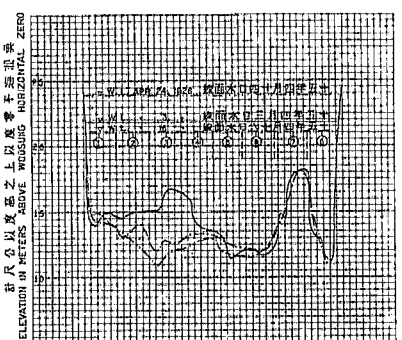
YANGTSE RIVER COMMISSION
TECHNICAL COMMITTEE
SURVEY DEPARTMENT
(SHANGHAI)

CROSS SECTIONS
OF YANGTSE RIVER
AT SZEPAKOW GAGING STATION
FOR
1935

民國十五年五月八日
測站之揚子江橫斷面及
實測流速曲線圖

PLATE 24





NOTE
THE DOTTED LINES DRAWN PERPENDICULARS TO THE WATER LINE OF THE CROSS SECTION INDICATE THE POSITIONS OF THE VERTICAL LINES BY WHICH THE SECTION WAS SEPARATED INTO THEORETICAL DIVISIONS.
THE MEAN VELOCITY OF THE WATER IN EACH DIVISION WAS DETERMINED FROM THE STATIONARY BOATS THAT OCCUPIED APPROXIMATELY THE POSITIONS INDICATED BY THE CIRCLED NUMBERS SHOWN
ALL SECTIONS FACE DOWNSTREAM

下所有於水之橫斷面上之垂直線表明該橫斷面分為理論之各分段其分段之法即以圈內之數目表之
各分段內水之平均速率係由停泊於約略各該分段位置之船測定之
各橫斷面均面向下流

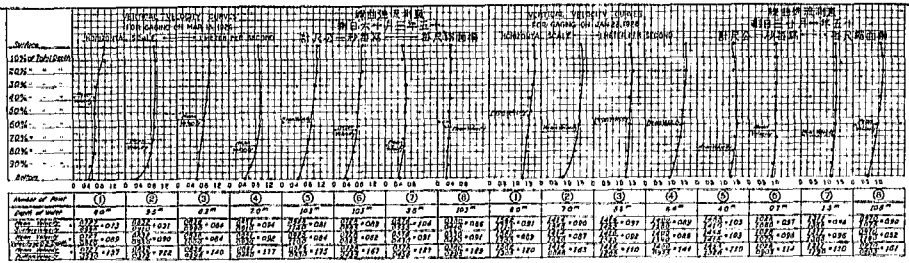
民國十五年四月尺八口
測站之揚子江橫斷面及
直測流速曲線圖

揚子江流域水利委員會測量隊繪製

YANGTZE RIVER COMMISSION
TECHNICAL COMMITTEE
SURVEY DEPARTMENT

CROSS SECTIONS
OF YANGTZE RIVER
AT SZEPAKOW GAGING STATION
FOR
APRIL 1924

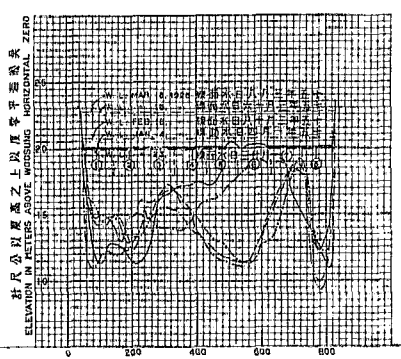
PLATE 23



Number of Point	①	②	③	④	⑤	⑥	⑦	⑧	①	②	③	④	⑤	⑥	⑦	⑧
Depth of Point	9.0m	9.5m	12m	10m	10.5m	10m	10m	10.5m	8.0m	7.0m	9.5m	8.5m	6.5m	4.0m	9.0m	10.5m
Mean Velocity	0.727	0.838	0.914	0.911	0.923	0.923	0.917	0.913	0.881	0.895	0.927	0.926	0.889	0.903	0.917	0.890
Surface Velocity	0.855	0.870	0.998	0.995	1.007	1.012	1.001	0.997	0.969	0.987	1.019	1.018	0.977	0.983	1.008	0.979
Mean Velocity of Vertical	0.727	0.838	0.914	0.911	0.923	0.923	0.917	0.913	0.881	0.895	0.927	0.926	0.889	0.903	0.917	0.890
Surface Velocity of Vertical	0.855	0.870	0.998	0.995	1.007	1.012	1.001	0.997	0.969	0.987	1.019	1.018	0.977	0.983	1.008	0.979
Area	8.145	7.980	10.968	9.110	9.690	9.230	9.170	9.576	7.048	6.265	8.813	7.871	5.778	3.612	8.253	9.345
Discharge	5.919	6.688	10.025	8.301	8.943	8.521	8.409	8.743	6.210	5.608	8.169	7.289	5.136	3.262	7.570	8.316
Mean Velocity	0.727	0.838	0.914	0.911	0.923	0.923	0.917	0.913	0.881	0.895	0.927	0.926	0.889	0.903	0.917	0.890
Surface Velocity	0.855	0.870	0.998	0.995	1.007	1.012	1.001	0.997	0.969	0.987	1.019	1.018	0.977	0.983	1.008	0.979
Area	8.145	7.980	10.968	9.110	9.690	9.230	9.170	9.576	7.048	6.265	8.813	7.871	5.778	3.612	8.253	9.345
Discharge	5.919	6.688	10.025	8.301	8.943	8.521	8.409	8.743	6.210	5.608	8.169	7.289	5.136	3.262	7.570	8.316

NOTE THE DOTTED LINES DRAWN PERPENDICULAR TO THE WATER LINE OF THE CROSS SECTION INDICATE THE POSITIONS OF THE VERTICAL LINES BY WHICH THE SECTION WAS SEPARATED INTO THEORETICAL DIVISIONS.

THE MEAN VELOCITY OF THE WATER IN EACH DIVISION WAS DETERMINED FROM THE STATIONARY BOATS THAT OCCUPIED APPROXIMATELY THE POSITIONS INDICATED BY THE CIRCLED NUMBERS SHOWN ALL SECTIONS FACE DOWNSTREAM



民國十五年一月二月及三月
尺八口測站之揚子江橫斷面
及直測流速曲線圖

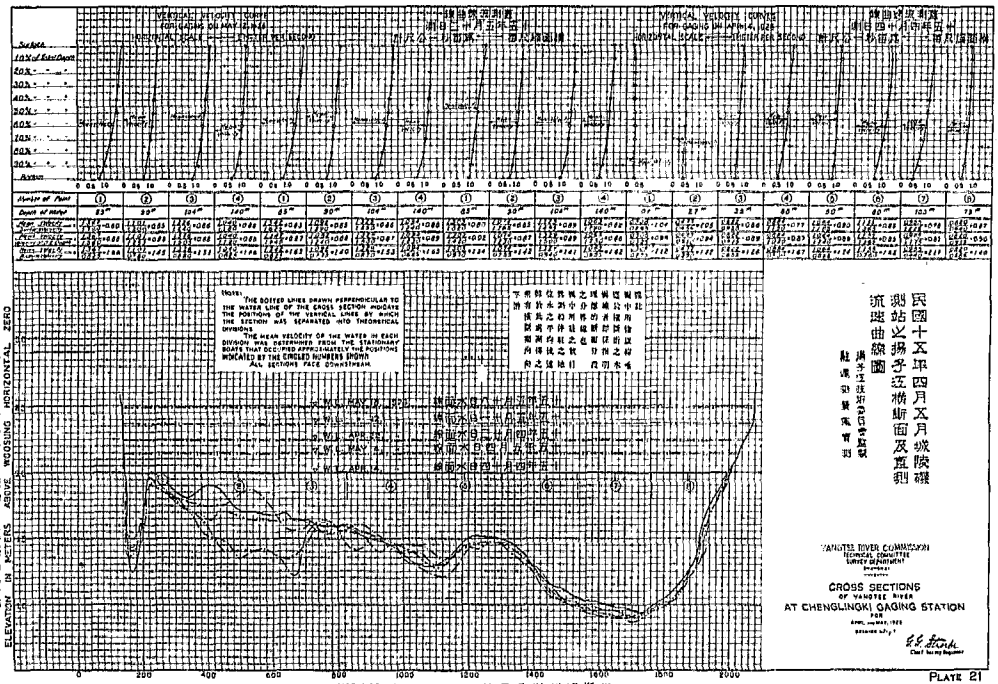
揚子江技術委員會製
蘇灣水利處實測

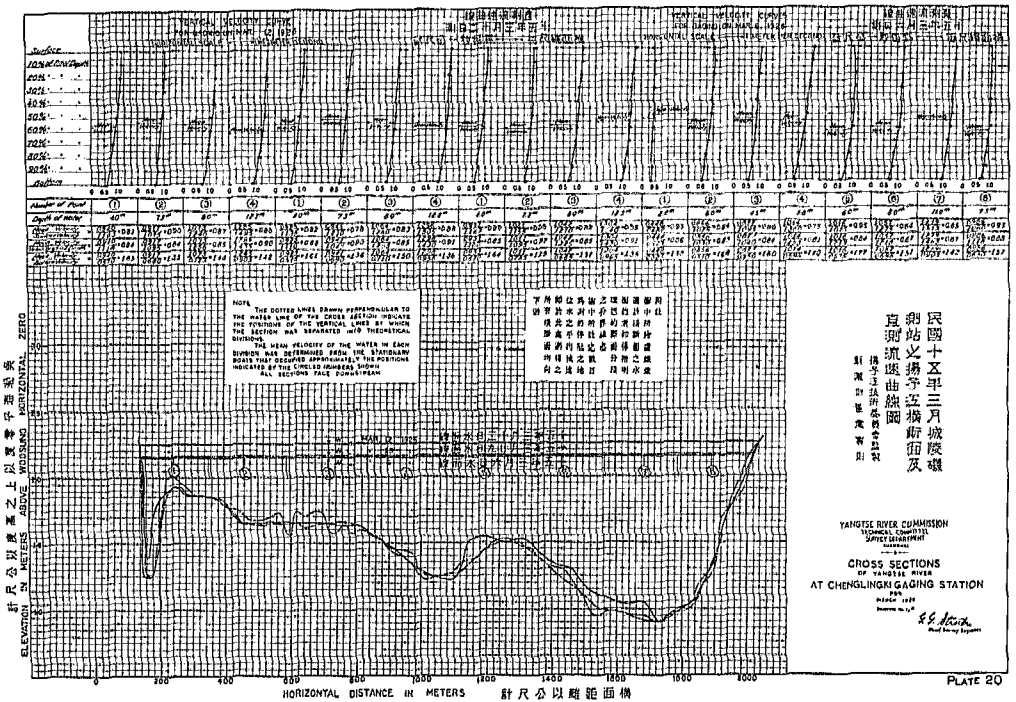
YANGTZE RIVER COMMISSION
TECHNICAL COMMITTEE
SURVEY DEPARTMENT

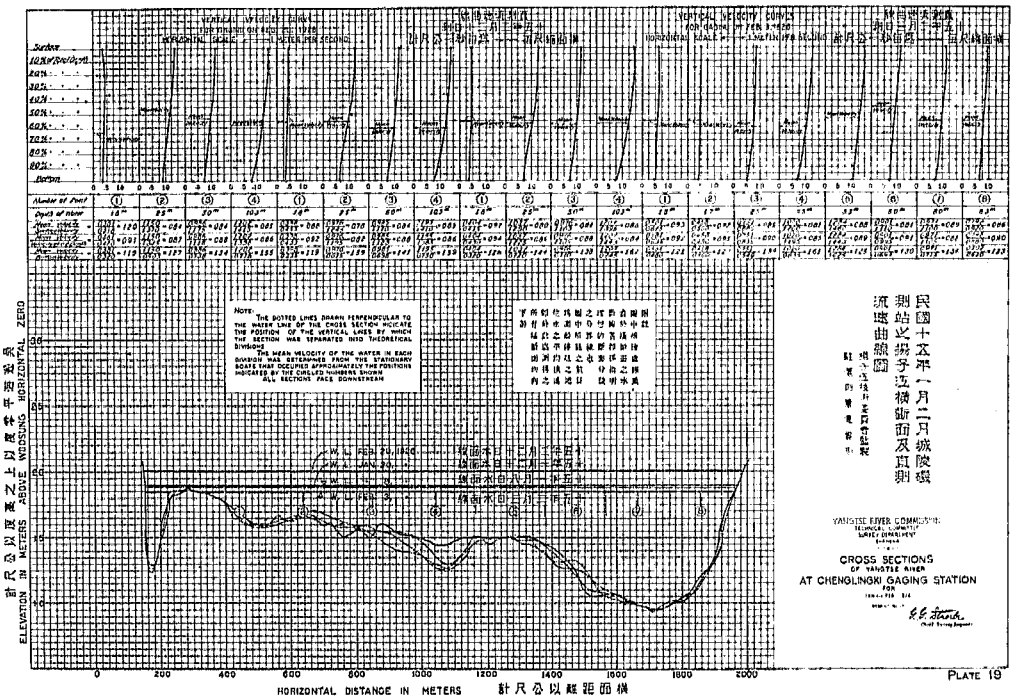
CROSS SECTIONS
OF YANGTZE RIVER
AT SZEPAKOW GAGING STATION
FOR
JANUARY-MARCH, 1926

Drawing No. 1-18
Chief Surveying Engineer

PLATE 22


VERTICAL WEIGHT SCALE
FOR GAGING OF MAY 10 1928
VERTICAL SCALE — 1 INCH PER 100 LBS
VERTICAL VELOCITY SCALE
FOR GAGING OF APRIL 4, 1928
VERTICAL SCALE — 1 INCH PER SECOND
Section 1
Section 2
Section 3
Section 4
Section 5
Section 6
Section 7
Section 8
Section 9
Section 10
Section 11
Section 12
Section 13
Section 14
Section 15
Section 16
Section 17
Section 18
Section 19
Section 20
Section


民國十五年三月城陵磯測站以揚子江橫斷面及實測流速曲線圖
揚子江水利委員會製
YANGTSE RIVER COMMISSION
CROSS SECTIONS
OF YANGTSE RIVER
AT CHENGLINGKI GAGING STATION
PLATE 20
NOTE
THE DOTTED LINES DRAWN PERPENDICULAR TO THE WATER LINE OF THE CROSS SECTION INDICATE THE POSITIONS OF THE VERTICAL LINES BY WHICH THE SECTION HAS BEEN DIVIDED INTO THEORETICAL DIVISIONS.
THE MEAN VELOCITY OF THE WATER IN EACH DIVISION HAS BEEN DETERMINED FROM THE STADIARY BOATS THAT OCCUPIED APPROXIMATELY THE POSITIONS INDICATED BY THE CIRCLED NUMBERS SHOWN ALL SECTIONS FACE DOWNSTREAM
ELEVATION IN METERS ABOVE WOOSUNG HORIZONTAL ZERO
HORIZONTAL DISTANCE IN METERS


民國十五年一月二只城陵磯
測站之揚子江橫斷面及其測
流速曲線圖
YANGTSE RIVER COMMISSION
TECHNICAL COMMITTEE
SURVEY DEPARTMENT
CROSS SECTIONS
OF YANGTSE RIVER
AT CHENGLINGKI GAGING STATION
FOR
1926
E. E. Leach
Chief Survey Engineer
NOTE:
THE DOTTED LINES DRAWN PERPENDICULAR TO THE WATER LINE OF THE CROSS SECTION INDICATE THE POSITION OF THE VERTICAL LINES BY WHICH THE SECTION WAS SEPARATED INTO THEORETICAL DIVISIONS.
THE MEAN VELOCITY OF THE WATER IN EACH DIVISION WAS DETERMINED FROM THE STATIONARY BOATS THAT OCCUPIED APPROXIMATELY THE POSITIONS INDICATED BY THE CIRCLED NUMBERS SHOWN ALL SECTIONS FACE DOWNSTREAM
A.W.L. FEB 25, 1926
A.W.L. JAN 31
A.W.L. FEB 5
ELEVATION IN METERS ABOVE WOOSUNG HORIZONTAL ZERO
HORIZONTAL DISTANCE IN METERS
PLATE 19

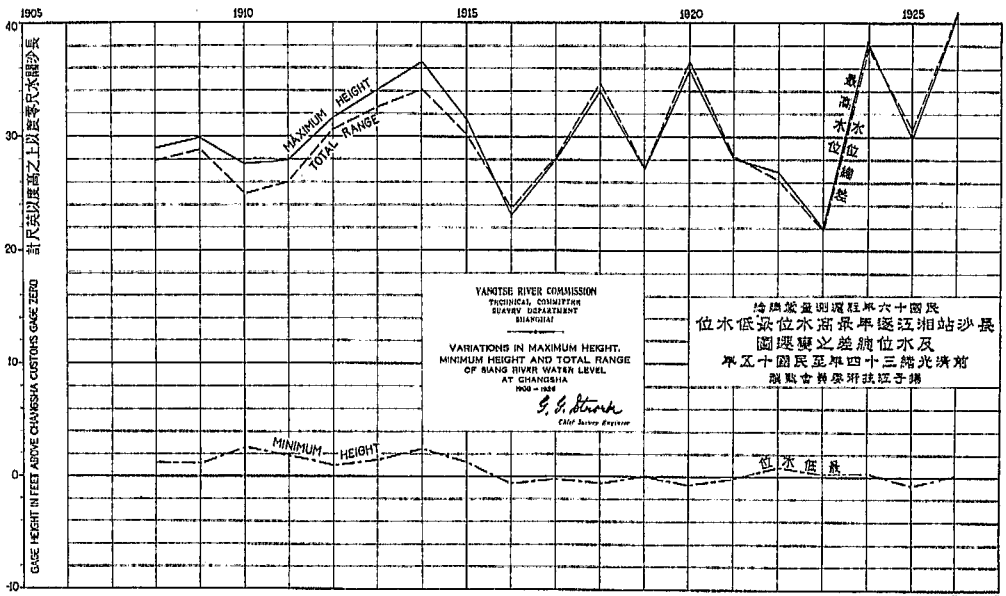

1905
1910
1915
1920
1925
40
30
20
10
0
-10
GAGE HEIGHT IN FEET ABOVE CHANGSHA CUSTOMS GAGE ZERO
計尺英以度高之上以度零尺水關沙長
MAXIMUM HEIGHT
TOTAL RANGE
最高水位綫
MINIMUM HEIGHT
最低水位
YANGTSE RIVER COMMISSION
TECHNICAL COMMITTEE
SURVEY DEPARTMENT
SHANGHAI
VARIATIONS IN MAXIMUM HEIGHT, MINIMUM HEIGHT AND TOTAL RANGE OF SIANG RIVER WATER LEVEL AT CHANGSHA
1908 - 1926
G. G. Stuart
Chief Survey Engineer
揚緝業量測議程第六十國民
位水低最位水高最年逐江湘站沙長
圖理整之差綫位水及
年五十國民至年四十三緒光清前
測勘合員委研技江子揚

PLATE 15

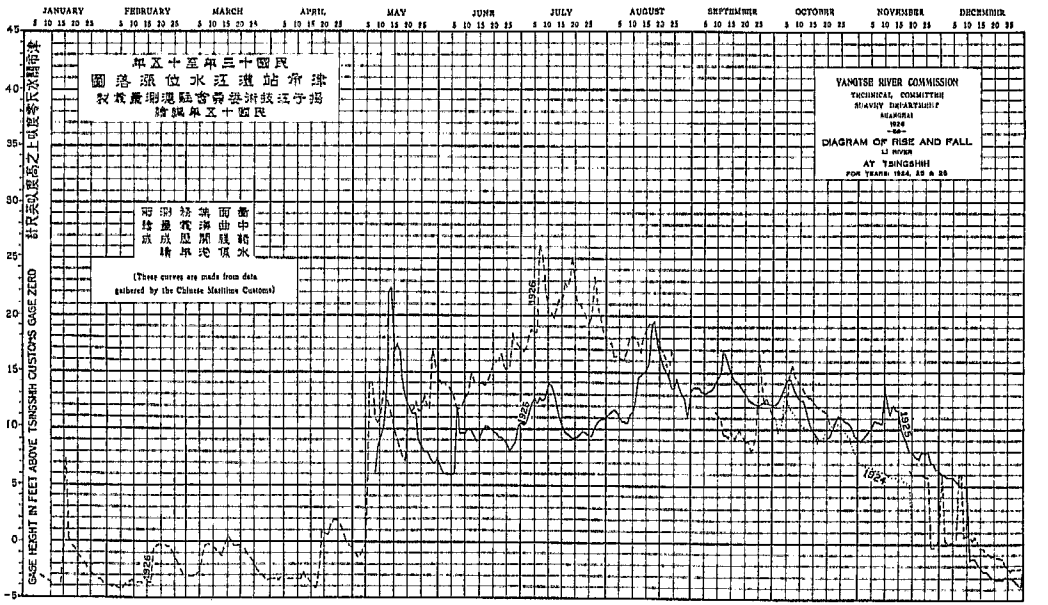

JANUARY
FEBRUARY
MARCH
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER
NOVEMBER
DECEMBER
GAGE HEIGHT IN FEET ABOVE TSINGSHIH CUSTOMS GAGE ZERO
45
40
35
30
25
20
15
10
5
0
-5
1926
1925
1924
1923
YANGTSE RIVER COMMISSION
TECHNICAL COMMITTEE
HYDRAULIC DEPARTMENT
SHANGHAI
1926
DIAGRAM OF RISE AND FALL
LI RIVER
AT TSINGSHIH
FOR YEARS 1924, 25 & 26
(These curves are made from data gathered by the Chinese Maritime Customs)

PLATE 17

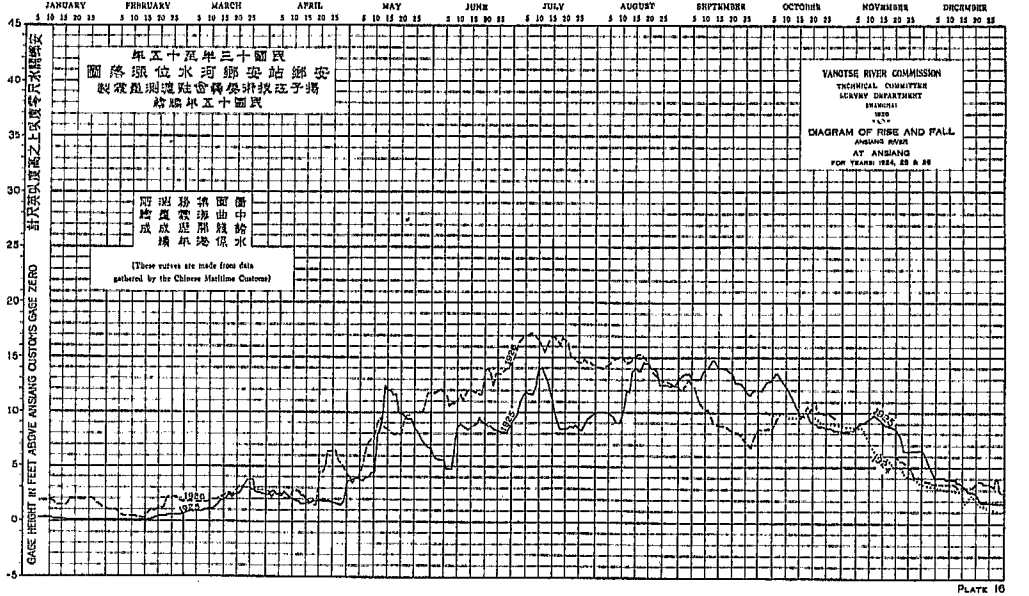

民國十三年至十五年
安慶站歷年水位漲落圖
揚子江水利委員會測量股繪製
民國十五年編
(These curves are made from data gathered by the Chinese Maritime Customs)
YANGTSE RIVER COMMISSION
TECHNICAL COMMITTEE
SURVEY DEPARTMENT
DIAGRAM OF RISE AND FALL
ANSIANG RIVER
AT ANSIANG
FOR YEARS 1924, 25 & 26
JANUARY
FEBRUARY
MARCH
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER
NOVEMBER
DECEMBER
GAGE HEIGHT IN FEET ABOVE ANSIANG CUSTOMS GAGE ZERO
對安慶公尺表之上或下水標準安
1924
1925
1926

PLATE 16

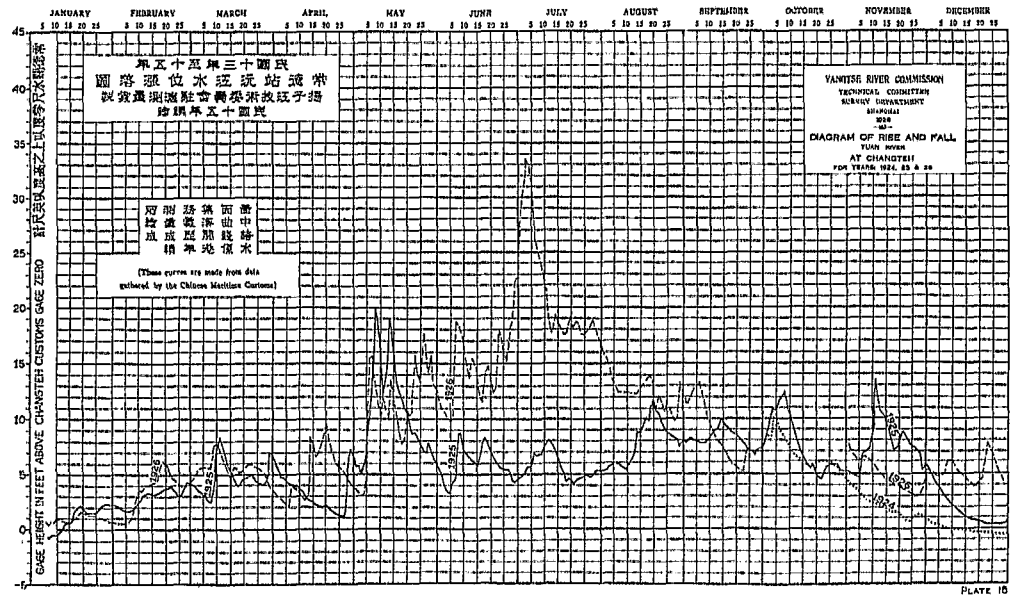
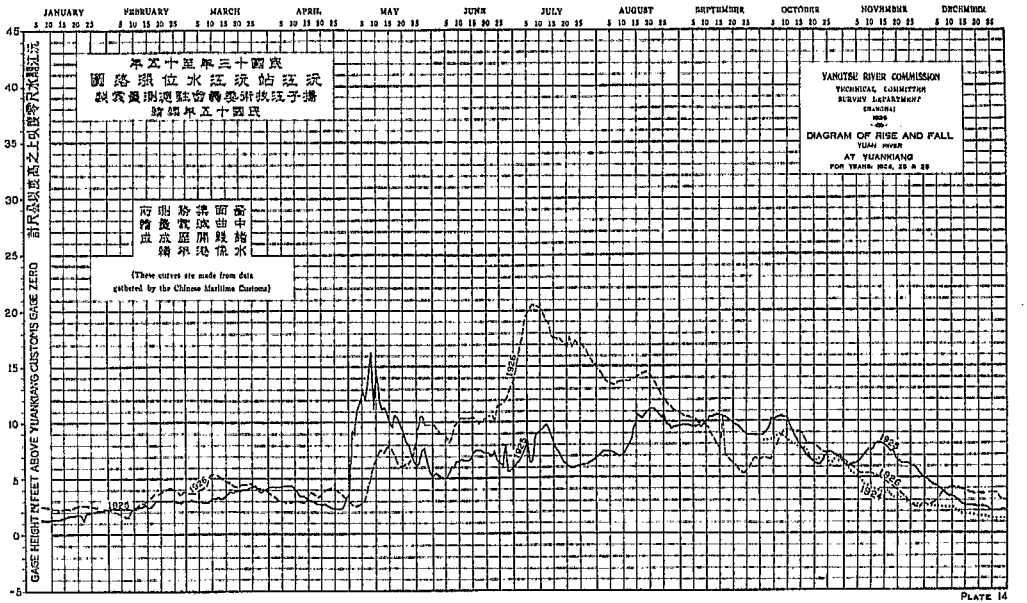
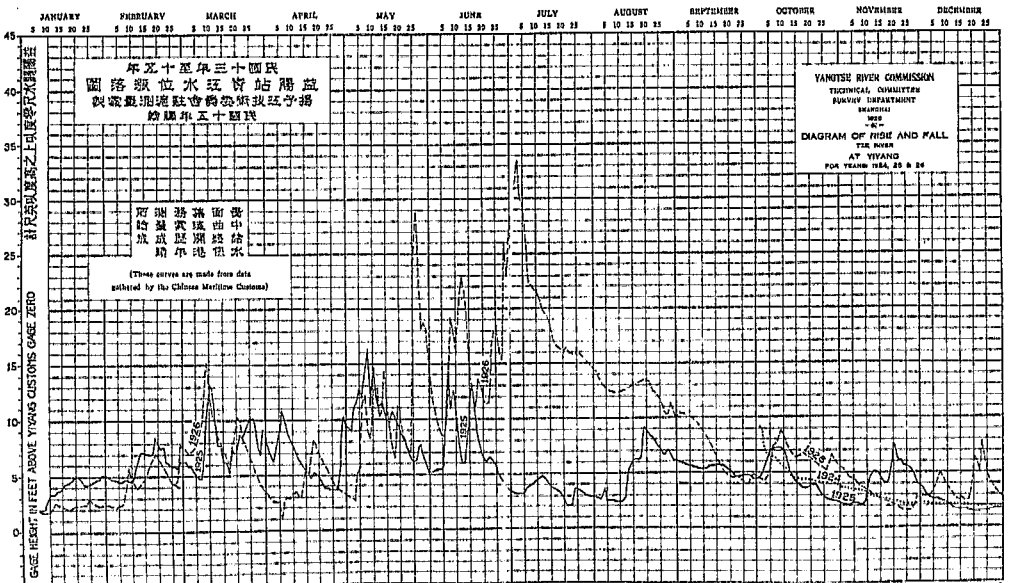

JANUARY
FEBRUARY
MARCH
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER
NOVEMBER
DECEMBER
GAGE HEIGHT IN FEET ABOVE CHANGTEH CUSTOMS GAGE ZERO
常德海關水位以上以尺爲準之水位高度
民國十三年至十五年
常德海關水位站逐日水位高度圖
按實測數目繪製以資參考
民國十五年揚子江水利委員會調查
VANGTSE RIVER COMMISSION
TECHNICAL COMMITTEE
SURVEY DEPARTMENT
SHANGHAI
1926
-of-
DIAGRAM OF RISE AND FALL
YUAN RIVER
AT CHANGTEH
FOR YEARS 1924, 25 & 26
(These curves are made from data
gathered by the Chinese Maritime Customs)
1923
1924
1925
1926

PLATE 18


JANUARY
FEBRUARY
MARCH
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER
NOVEMBER
DECEMBER
GAGE HEIGHT IN FEET ABOVE YUANKIANG CUSTOMS GAGE ZERO
45
40
35
30
25
20
15
10
5
0
-5
1925
1926
1927
1928
1929
1930
1931
1932
1933
1934
1935
1936
1937
1938
1939
1940
1941
1942
1943
1944
1945
1946
1947
1948
1949
1950
1951
1952
1953
1954
1955
1956
1957
1958
1959
1960
1961
1962
1963
1964


JANUARY
FEBRUARY
MARCH
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER
NOVEMBER
DECEMBER
GAGE HEIGHT IN FEET ABOVE YIVANG CUSTOMS GAGE ZERO
水尺英呎數高之上以度零尺水關海宜
民國十三年至十五年
宜昌站水位與歷年比較圖
揚子江水利委員會測量隊繪
民國十五年
(These curves are made from data collected by the Chinese Maritime Customs)
1926
1925
1924
1923
YANGTSE RIVER COMMISSION
TECHNICAL COMMITTEE
SURVEY DEPARTMENT
SHANGHAI
DIAGRAM OF RISE AND FALL
THE RIVER
AT YIVANG
FOR YEARS 1924, 25 & 26
PLATE 13

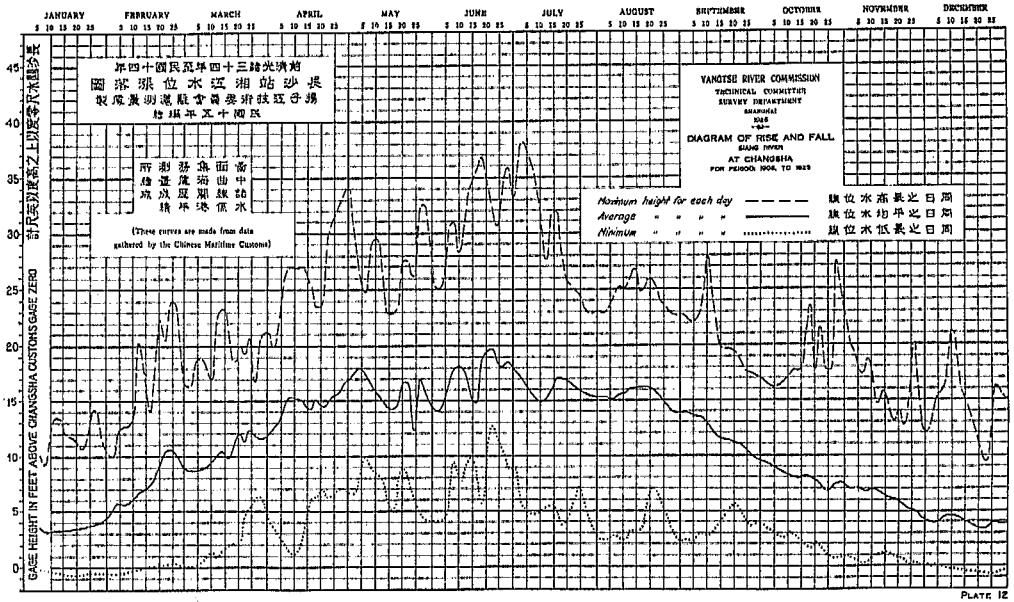

JANUARY
FEBRUARY
MARCH
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER
NOVEMBER
DECEMBER
GAGE HEIGHT IN FEET ABOVE CHANGSHA CUSTOMS GAGE ZERO
計尺英以長沙關水標零尺上以尺為水位之高度
民國十五年揚子江技術委員會水利處測量處製
長沙站湘江水位漲落圖
中國水利局
歷年最高水位曲線
歷年最低水位曲線
歷年平均水位曲線
所繪各線係根據海關報告成績
(These curves are made from data gathered by the Chinese Maritime Customs)
YANGTSE RIVER COMMISSION
TECHNICAL COMMITTEE
SURVEY DEPARTMENT
SHANGHAI
1925
DIAGRAM OF RISE AND FALL
XIANG RIVER
AT CHANGSHA
FOR PERIOD 1904, TO 1923
Maximum height for each day
Average " " "
Minimum " " "
每日最高水位
每日平均水位
每日最低水位

PLATE 12

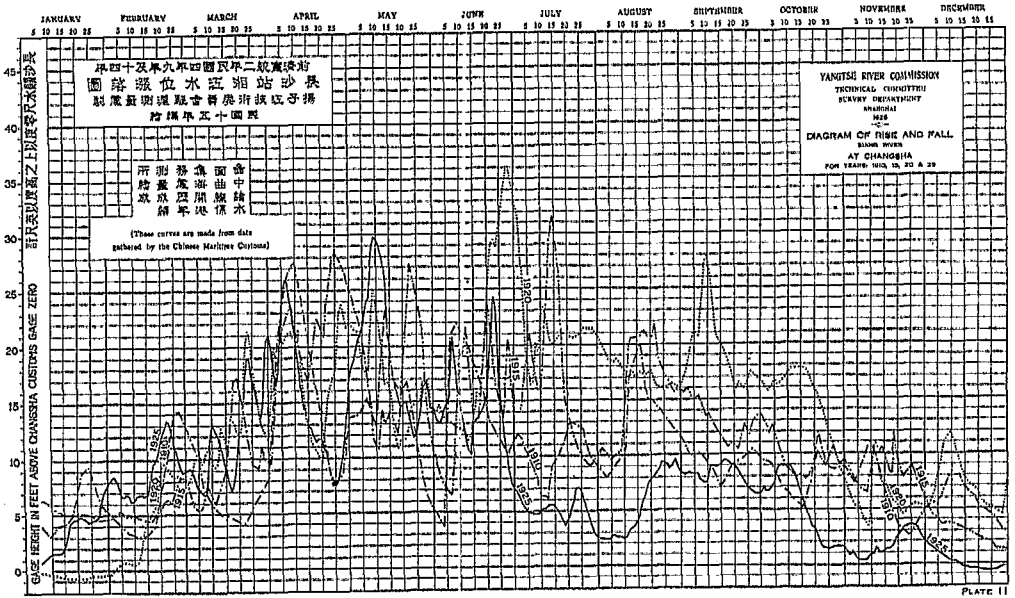

JANUARY
FEBRUARY
MARCH
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER
NOVEMBER
DECEMBER
GAGE HEIGHT IN FEET ABOVE CHANGSHA CUSTOMS GAGE ZERO
揚子江沙市至湘江水位漲落圖
民國十五年編制
(These curves are made from data gathered by the Chinese Maritime Customs)
YANGTSE RIVER COMMISSION
TECHNICAL COMMITTEE
SURVEY DEPARTMENT
SHANGHAI
1925
DIAGRAM OF RISE AND FALL
YANGTSE RIVER
AT CHANGSHA
FOR YEARS: 1913, 15, 20 & 25
1920
1915
1913
1925

PLATE II

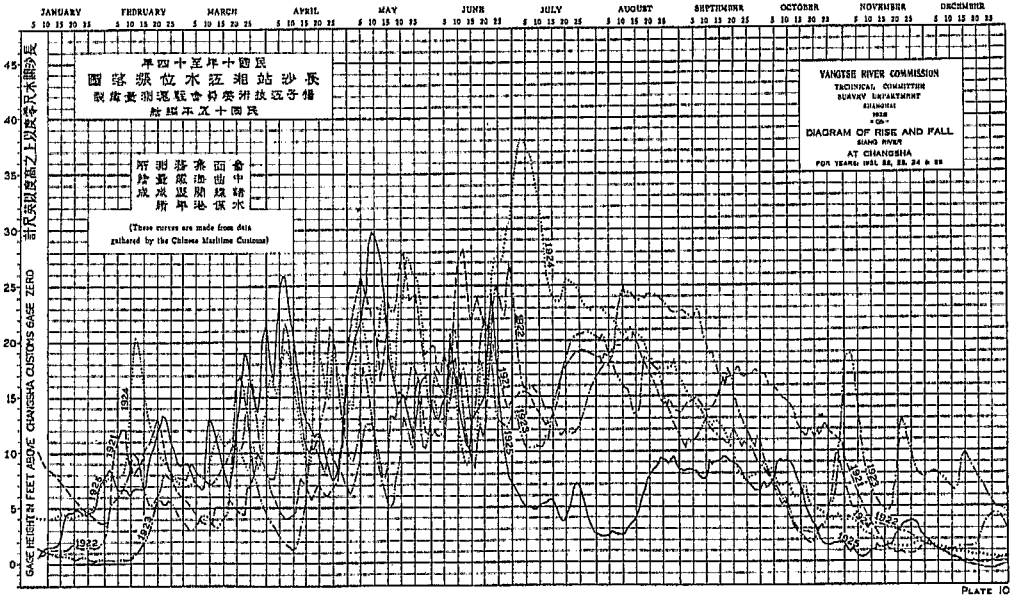

JANUARY
FEBRUARY
MARCH
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER
NOVEMBER
DECEMBER
GAGE HEIGHT IN FEET ABOVE CHANGSHA CUSTOMS BASE ZERO
吉尺表以長沙關海關基點之上以度水面之高低
民國十年至十四年
長沙站湘江水位漲落圖
製於民國十五年四月
(These curves are made from data gathered by the Chinese Maritime Customs)
VANGTSE RIVER COMMISSION
TECHNICAL COMMITTEE
SURVEY DEPARTMENT
DIAGRAM OF RISE AND FALL
SIANG RIVER
AT CHANGSHA
FOR YEARS: 1921, 22, 23, 24 & 25
1922
1923
1924
1925
1921

PLATE 10

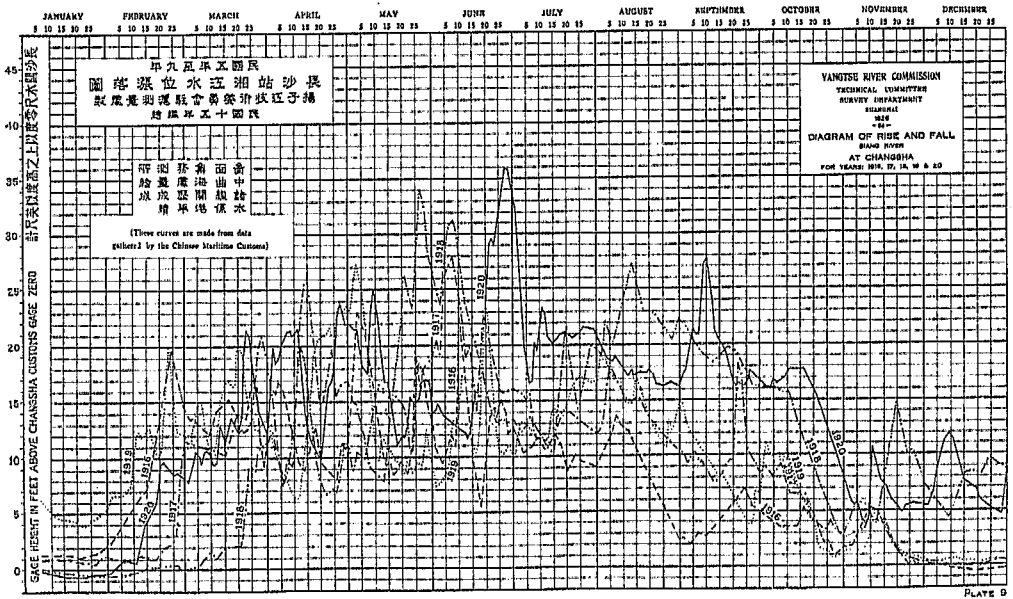

民國五年九月
長沙站江水位漲落圖
湘江水位漲落情狀委員會測量處製
民國十五年五月
VANGTSE RIVER COMMISSION
TECHNICAL COMMITTEE
SURVEY DEPARTMENT
DIAGRAM OF RISE AND FALL
AT CHANGSHA
FOR YEARS: 1919, 17, 16, 18 & 20
(These curves are made from data gathered by the Chinese Maritime Customs)
JANUARY
FEBRUARY
MARCH
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER
NOVEMBER
DECEMBER
GAGE HEIGHT IN FEET ABOVE CHANGSHA CUSTOMS GAGE ZERO
1919
1918
1917
1916
1920

PLATE 9

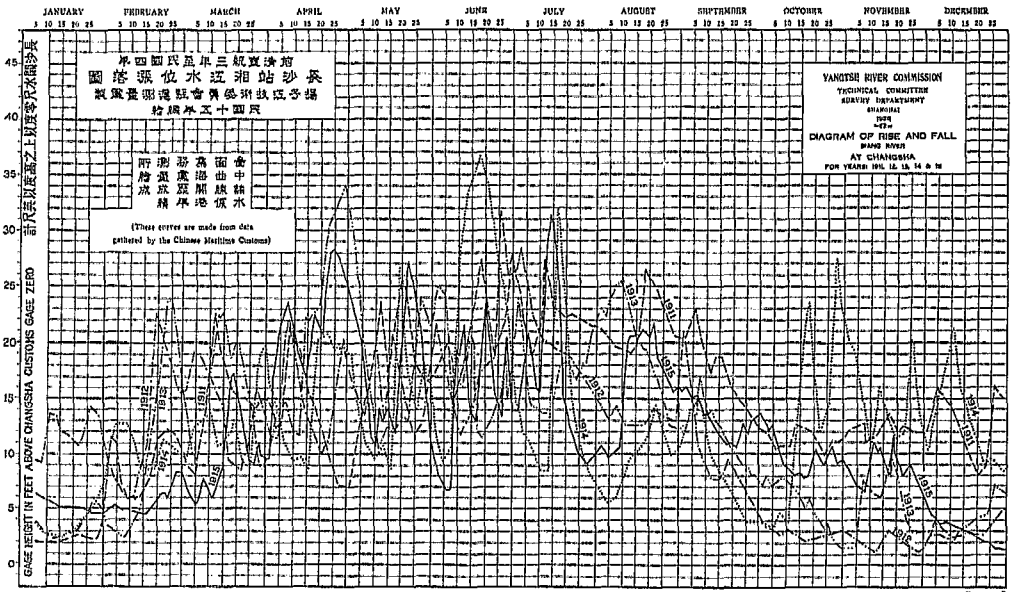

JANUARY
FEBRUARY
MARCH
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER
NOVEMBER
DECEMBER
GAGE HEIGHT IN FEET ABOVE CHANGSHA CUSTOMS GAGE ZERO
計尺高以長沙關水尺零點之上以英尺計算
YANGTSE RIVER COMMISSION
TECHNICAL COMMITTEE
SURVEY DEPARTMENT
SHANGHAI
1914
DIAGRAM OF RISE AND FALL
YANG RIVER
AT CHANGSHA
FOR YEARS 1911, 12, 13, 14 & 15
(These curves are made from data gathered by the Chinese Maritime Customs)
1911
1912
1913
1914
1915

PLATE 8

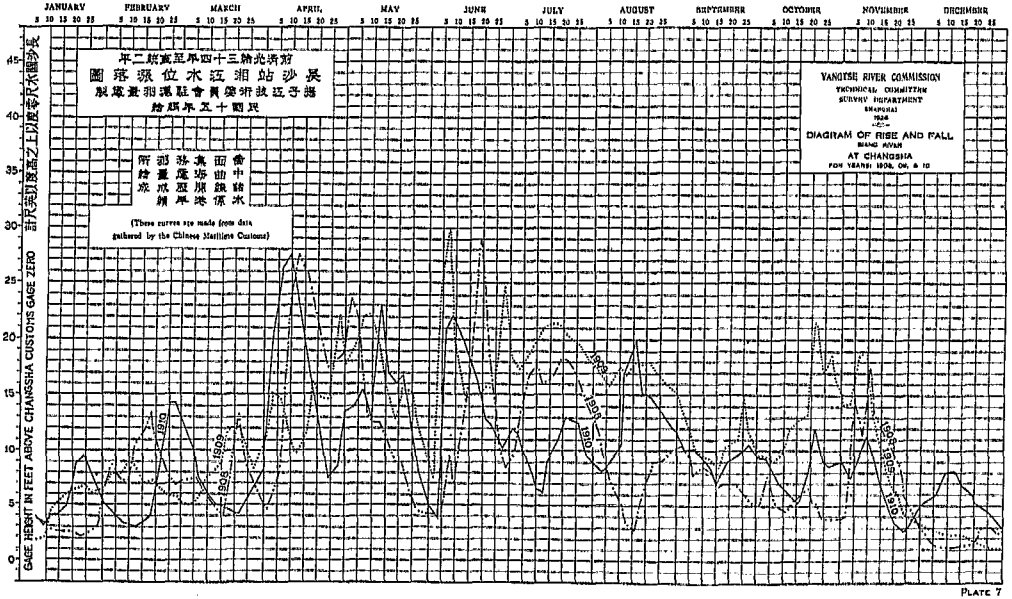
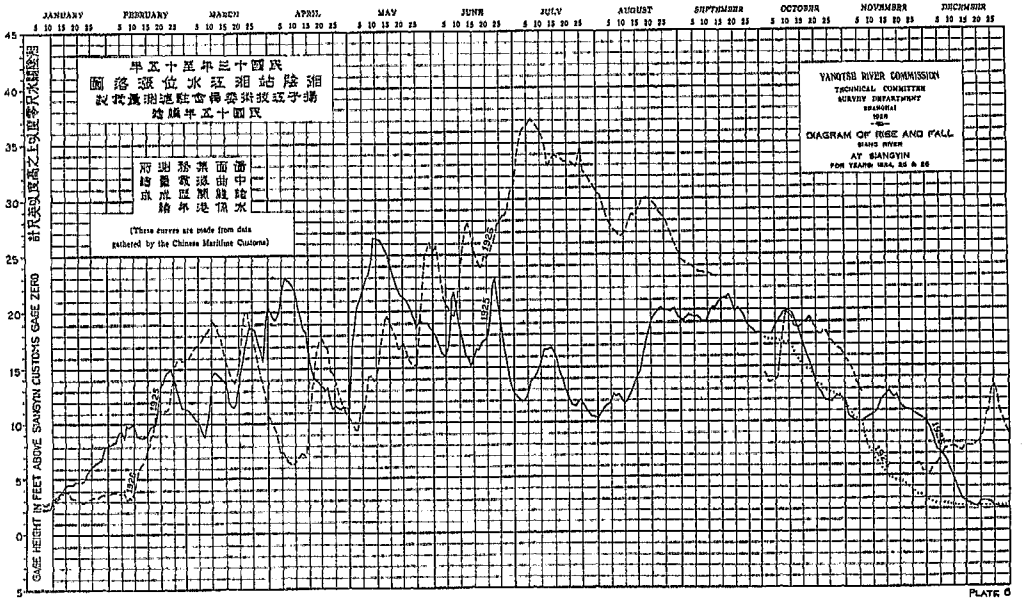
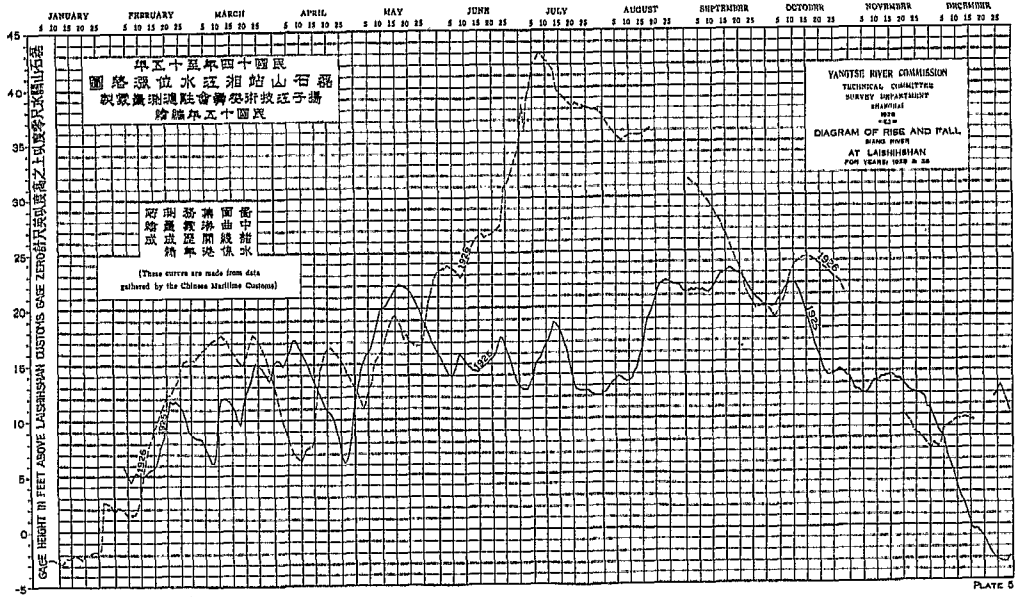
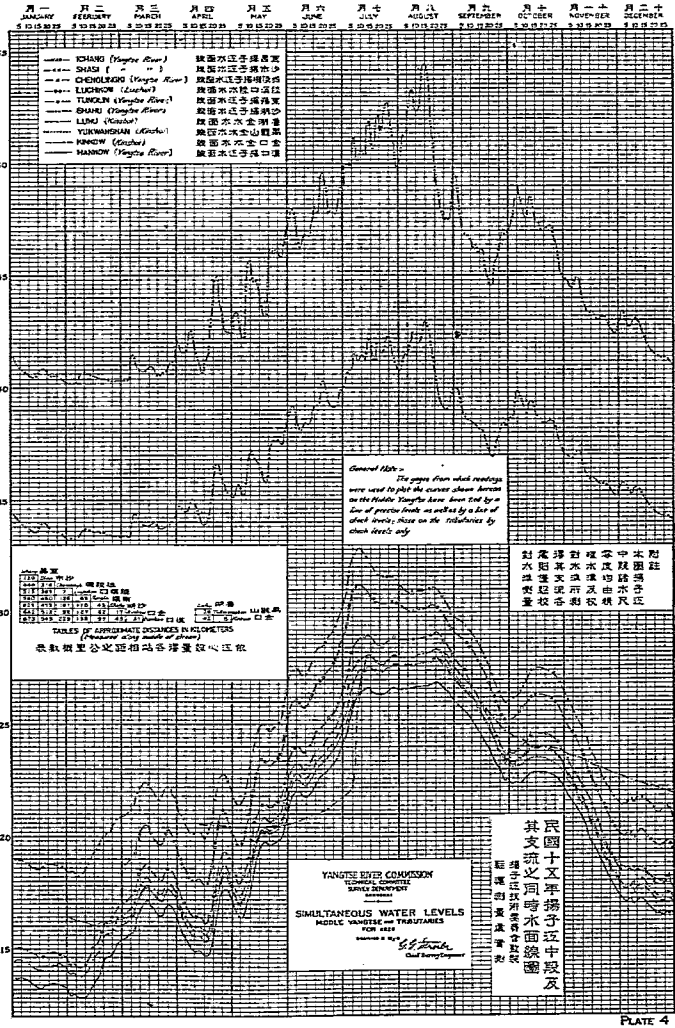

JANUARY
FEBRUARY
MARCH
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER
NOVEMBER
DECEMBER
GAGE HEIGHT IN FEET ABOVE CHANGSHA CUSTOMS GAGE ZERO
計尺起原高之上以長沙關水標零尺水關沙長
前北洋三十四年至民國二十五年歷年最高最低水位逐日記錄圖
長沙站湘江水位漲落圖
揚子江技術委員會駐漢辦事處製
VANGTSE RIVER COMMISSION
TECHNICAL COMMITTEE
SURVEY DEPARTMENT
SHANGHAI
1926
DIAGRAM OF RISE AND FALL
DAILY MEAN
AT CHANGSHA
FOR YEARS: 1908, 09, & 10
(These curves are made from data gathered by the Chinese Maritime Customs)
1908
1909
1910

PLATE 7


民國十三年至十五年
湘陰站沿江水位漲落圖
(根據湘通航委會海關報告編製)
民國十五年編製
(These curves are made from data gathered by the Chinese Maritime Customs)
YANGTSE RIVER COMMISSION
TECHNICAL COMMITTEE
SURVEY DEPARTMENT
SHANGHAI
1926
DIAGRAM OF RISE AND FALL
OF
SIANG RIVER
AT SIANGYIN
FOR YEARS 1924, 25 & 26
GAGE HEIGHT IN FEET ABOVE SIANGYIN CUSTOM'S GAGE ZERO
水尺零點以上之水位高度(英尺)
JANUARY
FEBRUARY
MARCH
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER
NOVEMBER
DECEMBER
1924
1925
1926
PLATE 6

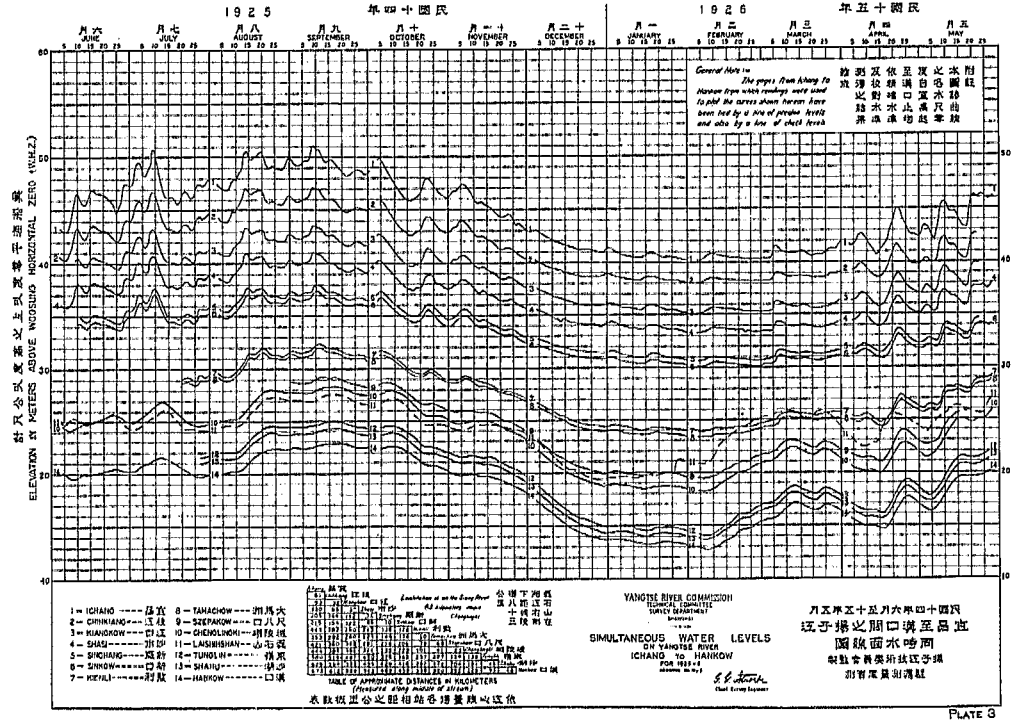

JANUARY
FEBRUARY
MARCH
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER
NOVEMBER
DECEMBER
GAGE HEIGHT IN FEET ABOVE LAISHIHSHAN DATUM IS GAGE ZERO低只與吳淞口水位相比較之上或低於吳淞口若干
民國十四年至十五年
石磯山始淮江水位表略圖
揚子江救災會籌委員會測量
民國十五年繪
雷中繪火
雨曲線表
雨量表
雨量表
雨量成績
(These curves are made from data gathered by the Chinese Maritime Customs)
YANGTSE RIVER COMMISSION
TECHNICAL COMMITTEE
SURVEY DEPARTMENT
SHANGHAI
1928
DIAGRAM OF RISE AND FALL
AT LAISHIHSHAN
FOR YEARS 1923 & 24
1924
1923
1925
PLATE 5



計尺公氏高度與零平淞吳

民國十五年揚子江中段及其支流以同時水面線圖

PLATE 4


1925
民國十四年
1926
民國十五年
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER
NOVEMBER
DECEMBER
JANUARY
FEBRUARY
MARCH
APRIL
MAY
ELEVATION IN METERS ABOVE WOOSUNG HORIZONTAL ZERO (WUHZ.)
General Note in
The gages from Ichang to Hankow from which readings were used to plot the curves shown hereon have been tied by a line of precise levels and also by a line of check levels
1 — ICHANG ——— 宜昌
2 — CHIHKIANG ——— 沙市
3 — HWANGKOW ——— 黃洋
4 — SHASI ——— 沙市
5 — SHICHANG ——— 斯市
6 — SINKOW ——— 口新
7 — KIEHLI ——— 附厘
8 — TAHACHOW ——— 洲馬大
9 — SZEPAKOW ——— 口八尺
10 — CHENGLUHOKI ——— 洲陸城
11 — LANSHISHAN ——— 山石藍
12 — TUNGLIN ——— 林東
13 — SHATU ——— 頭沙
14 — HANKOW ——— 口漢
TABLE OF APPROXIMATE DISTANCES IN KILOMETERS
(Measured along middle of stream)
表數概里公之距相站各埠量測以江依
YANGTSE RIVER COMMISSION
TECHNICAL COMMITTEE
SURVEY DEPARTMENT
SIMULTANEOUS WATER LEVELS
ON YANGTSE RIVER
ICHANG TO HANKOW
FOR 1925-26
E. G. Harris
Chief Survey Engineer
民國十四年六月至十五年五月
江子揚至昌宜
圖線面水時同
Plate 3

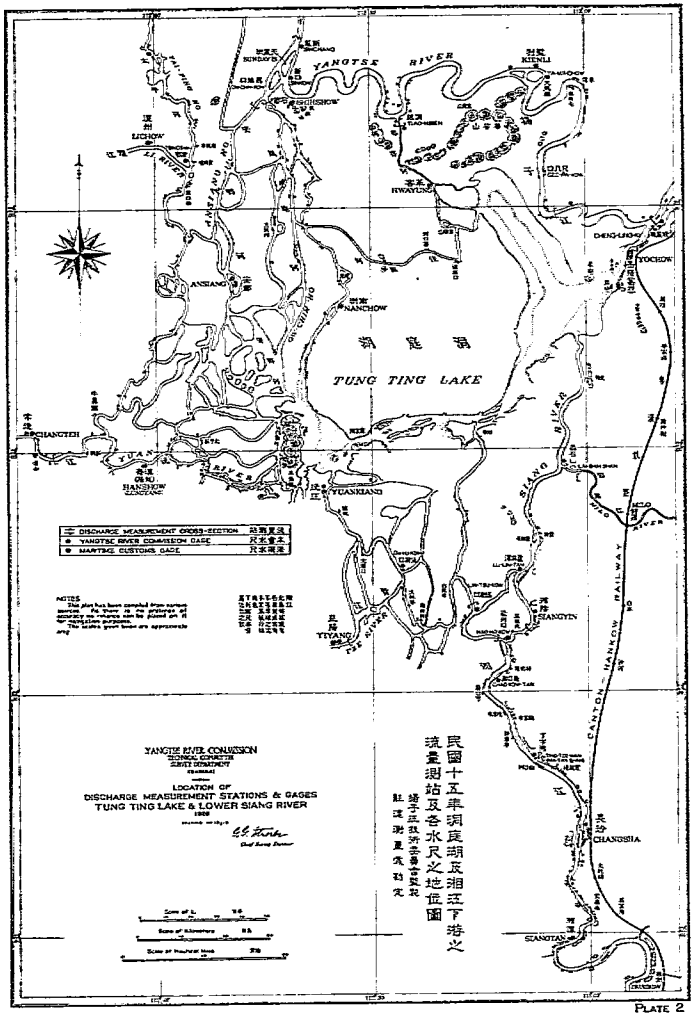

YANGTSE RIVER
TUNG TING LAKE
YUANKIANG
YIYANG
HANKOW
SIANGYIN
CHANGSHA
YOCHOW
NANCHOW
ANSIANG
SIANGTAN
CANTON-HANKOW RAILWAY
DISCHARGE MEASUREMENT CROSS-SECTION
YANGTSE RIVER COMMISSION GAGE
MARITIME CUSTOMS GAGE
NOTES
YANGTZE RIVER COMMISSION
TECHNICAL COMMITTEE
SURVEY DEPARTMENT
LOCATION OF
DISCHARGE MEASUREMENT STATIONS & GAGES
TUNG TING LAKE & LOWER SIANG RIVER
民國十五年洞庭湖及湘江下游之
流量測站及各水尺之地位圖

PLATE 2

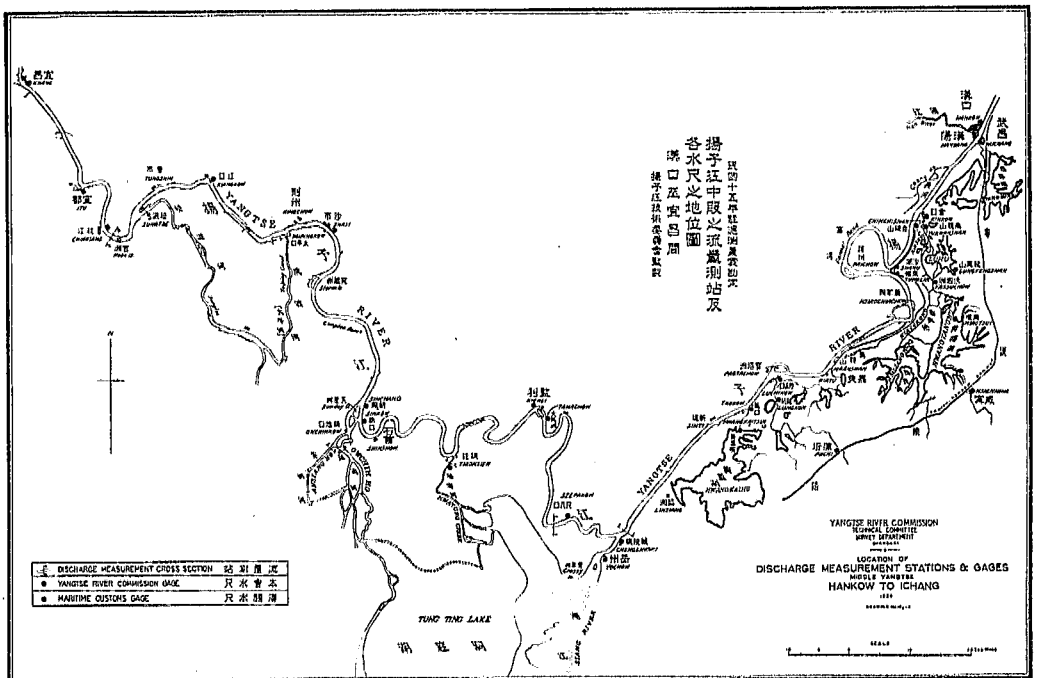

揚子江中段之流量測站及各水尺之地位圖
漢口至宜昌間
DISCHARGE MEASUREMENT CROSS SECTION
YANGTSE RIVER COMMISSION GAGE
MARITIME CUSTOMS GAGE
YANGTSE RIVER COMMISSION
TECHNICAL COMMITTEE
SURVEY DEPARTMENT
LOCATION OF
DISCHARGE MEASUREMENT STATIONS & GAGES
MIDDLE YANGTSE
HANKOW TO ICHANG
HANKOW
YANGTZE
RIVER
DUNGTING LAKE

PLATE 1

NAMES MENTIONED IN THIS REPORT—*(Continued)*

Taokow	口 島	Taokowchi, tributary, Mid-Yangtse
Taokowchi	溪 口 島	Tributary, Mid-Yangtse
Tatung	通 大	Anhwei
Teian	安 德	Kiangsi
Tiachsien	統 調	Hwayung, tributary, Mid-Yangtse
Tingtzewan	湾 字 丁	Siang River
Tsingshih	市 津	Taiping River, Tungting Basin
Tungliu	流 東	Anhwei
Tungpienshan	山 邊 東	Kiangsi
Tungshih	市 堂	Mid-Yangtse
Tungting Lake	湖 庭 洞	Hunan
Tze River	江 資	„
Wangkiang	江 望	Anhwei
Wuchang	昌 武	Hupeh
Wuhu	湖 蕪	Anhwei
Yiyang	陽 益	Tze River, Tungting Basin
Yochow	州 岳	Hunan, Mouth of Tungting Lake
Yuankiang	江 沅	Tungting Basin
Yuan River	江 沅	Hunan
Yukwanshan	山 觀 禹	Kinshui, tributary, Mid-Yangtse

NAMES MENTIONED IN THIS REPORT—*(Continued)*

Milo River	江羅汨	Tungting Basin
Nanchow	洲南	Tungting Basin
Nanking	京南	Kiangsu
Oliphant Island	洲家張	Kiangsi
Owchih Ho	河池藕	Tributary, Mid-Yangtse
Owchihkow	口池藕	Owchih River, tributary, Mid-Yangtse
Paichow	洲牌	Middle Yangtse River
Paotachow	洲塔寶	„ „ „
Pigeon Island	洲鴿	Kiangsi
Pingfengshan	山風屏	„
Poyang Lake	湖陽鄱	„
Puchi	圻蒲	Hupeh
Sengchiawan	灣家盛	Kiangsi
Shahu	湖沙	Mid-Yangtse
Shasi	市沙	„ „
Shihshow	首石	„ „
Siang River	江湘	Tributary, Mid-Yangtse
Siangtan	潭湘	Tungting Basin
Siangyin	陰湘	Siang River, Hunan
Siaochikow	口池小	Kiangsi
Sinchang	廠新	Mid-Yangtse
Sinkow	口新	„ „
Sinti	堤新	„ „
Storm Island	洲起突	„ „
Sunday Island	洲星天	„ „
Sungtze	滋松	Sungtse River, tributary, Mid-Yangtse
Sungtze Ho	河滋松	Tributary, Mid-Yangtse
Susung	松宿	Anhwei
Szepakow	口八尺	Mid-Yangtse
Tachishan	山雞大	Kiangsi
Tafuchieh	街復大	Town on Yangtse, 125 kms. below Ichang
Taiping Ho	河渡虎	Tributary, Mid-Yangtse
Taipingkow	口平太	Taiping River, tributary, Mid-Yangtse
Tamachow	洲馬大	Mid-Yangtse
Tangsunhu	湖蓀湯	Hupeh

NAMES MENTIONED IN THIS REPORT—*(Continued)*

Hwangkaitsui	嘴盖黄	Hwangkaihu, Hupeh
Hwangtanghu	湖塘黄	Hupeh
Hwayung	容華	Hwayung River, tributary, Mid-Yangtse
Ichang	昌宜	Mid-Yangtse, Hupeh
Itu	都宜	„ „ „
Kiangchiao	橋江	Kiangsi
Kiangkow	口江	Mid-Yangtse, Hupeh
Kiayu	魚嘉	Hupeh
Kiayukong	港魚嘉	Tributary, Kinshui Basin
Kienli	利豐	Mid-Yangtse, Hupeh
Kingchi	雞金	Kiangsi
Kingchow	州荆	Mid-Yangtse
Kinkow	口金	Mid-Yangtse, Mouth of Kinshui
Kinshui	水金	Tributary, Mid-Yangtse
Kungtsekong	港子公	Tributary, Kinshui Basin
Kweichih	池貴	Anhwei
Laishihshan	山石磊	Siang River, Hunan
Lichow	州澧	Li River, Tungting Basin
Linsiang	湘臨	Mid-Yangtse, Hunan
Lintsukow	口資臨	Tungting Basin
Liushuichiao	橋溯流	Kiangsi
Luchikow	口溪陸	Lushui, tributary, Mid-Yangtse
Luhu	湖魯	Hupeh
Lulintan	潭林直	Siang River, Hunan
Lungfengshan	山鳳龍	Luhu, Hupeh
Lungyang	陽龍	Yuan River, Tungting Basin
Lungkou	坑龍	Lushui, tributary, Mid-Yangtse
Lushui	水陸	Tributary, Mid-Yangtse
Maanshan	山鞍馬	Right bank, Mid-Yangtse
Mahuati	堤華馬	Kiangsi
Matikow	口蹄馬	Hupeh
Matung	當馬	Kiangsi
Miaochui	嘴廟	Hwangtanghu, Hupeh
Mienyang	陽河	Hupeh
Milo	羅泊	Milo River, Tungting Basin

NAMES MENTIONED IN THIS REPORT

Ansiang	鄭安	Ansiang River, tributary, Mid-Yangtse
Ansiang Ho	河鄭安	Tributary, Mid-Yangtse
Chang Ho	河長	" " "
Changsha	沙長	Siang River, Hunan
Changteh	德常	Yuan River, Tungting Basin
Chaokowtan	灘口喬	Tungting Basin
Chenglingki	磯陵城	Mid-Yangtse, Mouth of Siang River
Chenwan	灣陳	Kiangsi
Chihchishan	山磯赤	Kinshui, tributary, Mid-Yangtse
Chihkiang	江枝	Mid-Yangtse River
Chihukow	口湖蔗	Tungting Basin
Chuchow	州株	" "
Chungking	慶重	Szechwan
Ertaokow	口套二	Kiangsi
Farmer Bend	灣窖	Mid-Yangtse River
Faszechow	洲酒法	Kinshui, tributary, Mid-Yangtse
Futaohu	湖頭斧	Hupeh
Grassy Island	洲草青	Tungting Basin
Hankow	口漢	Mid-Yangtse, Hupeh
Han River	江漢	Tributary, Mid-Yangtse
Hanshow	壽漢	Tungting Basin
Hanyang	陽漢	Hupeh
Haohokow	口河濠	Tungting Basin
Hope Island	洲官	Mid-Yangtse
Hosueh	穴郝	Hupeh
Hsiaochiachow	洲家蕭	17 kms. above Farmer Bend
Hsienning	寧咸	Hupeh
Hsiliangbu	湖良西	"
Hsuancheng	城宣	Anhwei
Huangchintsui	嘴金黃	Kiangsi
Huangmaotang	潭茅黃	"
Huangwan	灣黃	"
Hukow	口湖	"
Hwaining	寧懷	Anhwei
Hwangkaihu	湖蓋黃	Hupeh

APPENDIX

hydraulic turbines, steam or crude oil engines as the case may be.

In every year there are nearly two months when the difference of water level on both sides of the dam is so small, say less than three feet that the hydraulic turbines cannot give enough power to move the tanks, etc. Therefore separate estimates for the following five cases have been made:

1. Turbine propulsion for 10 months and portage for 2 months
2. Turbine propulsion for 10 months and steam engine for 2 months
3. Steam engine propulsion for 12 months
4. Turbine propulsion for 10 months and crude oil engine for 2 months
5. Crude oil engine propulsion for 12 months

These estimates with drawings have been embodied in a special report to the Technical Committee and obviously cannot be included in this general report.

(D) SPECIAL SURVEY OF DIKES

The general topographic survey of any area by the Department always includes the dikes whenever found as one of the principal features. However, there are local flood prevention and control problems that necessitate the special and detailed survey of certain important dikes. One of these is the Government dike located on the right bank of the Yangtse from Chihchishan to Maanshan. A survey party commenced in May to make this survey starting at Chihchishan but due to the breaking of this dike on July the 4th at several points and the subsequent flooding of the dike-enclosures the work had to be suspended. About a half, or 25 kilometers of the length of the dike, was covered with 71 cross sections made.

Plates 138 to 139 show an index plan of this dike and Plates 140 to 145 give the cross sections made.

Respectfully submitted
G. G. STROEBE
Chief Survey Engineer

(f) *Designing and Estimating of Structures*

The tentative design that has been made in the previous year of a lock on the Kinshui at Yukwanshan was considerably revised in 1926 due to the acquisition of further hydrological data. An alternative and tentative design was therefore made of a lock with sluice gates to be located at Chihchishan across the river from and about one kilometer below Yukwanshan where a substantial rock foundation was discovered by boring tests.

A special report in considerable detail accompanied by drawings of this alternative design of the lock for the Chihchishan site has been made to the Technical Committee, which information obviously cannot be reproduced in a general report such as this is; however, a very brief outline is hereunder given.

The design of a lock and a dam with the necessary sluice gates on the Kinshui involves considerable complication owing to the fact that the level of the Yangtse varies continuously and the further fact that the level of the water behind the lock after completion would also vary continuously from various causes. A considerable study was required of the meteorological and hydrological conditions of the Kinshui affecting stream flow, and of the head waters as well as the variations of water level of the Yangtse at Kinkow, where the Kinshui joins the Yangtse. In this study as much as possible of the needed information has been culled from the records and files of the Siccawei Observatory and the Maritime Customs in addition to that which has been gathered by our own field men. Owing to the incompleteness of this information certain reasonable assumptions bearing on the side of safety were made to form a basis on which preliminary computations could be made for the dimensions for a tentative design.

The chief function of this lock is to allow traffic to pass the dam on the river. As an alternative to the lock but to perform the same work, an inclined railway has for estimate purposes been designed to be located near the site of the proposed dam at Yukwanshan. In this alternative design the dam and sluice gates are also necessary component parts. The inclined railway design involves the use of a tank car, counter weight cars, primemover, hoist, and railway track. The boats along the Kinshui (steam launches, junks, sampans, etc.) would be loaded into a tank car which would be hauled up and down the inclined tracks from the lake side to the river side of the dam by a wire rope hoist and vice versa, propelled by

A summary table on boat traffic passing Yukwanshan on the Kinshui is given below:

MEAN DAILY BOAT TRAFFIC (IN NUMBER) ON THE KINSHUI AT YUKWANSHAN DURING PERIOD JUNE-DECEMBER 1926.

Day of Month	Upriver					Downriver					Mean Daily Total
	A	B	C	D	Mean Total	A	B	C	D	Mean Total	
1	2	7	14	26	49	2	9	15	28	54	103
2	2	8	15	28	53	2	6	15	26	49	102
3	2	8	15	28	53	1	9	14	28	52	105
4	2	9	13	29	53	2	6	11	32	51	109
5	2	9	17	32	60	2	10	14	31	57	117
6	1	8	17	29	55	2	11	12	24	49	104
7	1	8	17	31	57	2	9	15	25	51	108
8	2	8	19	28	57	2	7	13	27	49	106
9	2	8	19	30	58	2	9	16	35	62	120
10	1	8	17	29	55	2	8	15	32	57	112
11	2	8	17	31	58	2	9	16	30	57	115
12	2	21	33	36	92	2	7	12	29	50	142
13	2	13	22	29	66	2	8	12	28	50	116
14	2	10	13	24	54	2	6	10	25	43	97
15	2	17	24	29	72	2	5	9	23	39	111
16	2	8	20	23	53	2	6	10	28	46	104
17	2	14	22	38	76	2	10	13	37	62	138
18	2	11	22	34	69	2	8	13	38	61	130
19	2	9	20	29	60	3	8	12	32	55	115
20	2	8	18	32	60	3	13	15	32	63	123
21	2	10	16	24	52	2	9	12	27	50	102
22	2	10	18	33	63	3	5	10	32	50	113
23	3	11	18	28	60	2	8	12	31	53	113
24	3	11	16	31	61	3	11	14	39	67	128
25	3	11	21	30	65	2	9	15	32	58	123
26	2	9	19	33	63	3	10	19	37	69	132
27	3	8	20	30	61	2	8	13	29	52	113
28	2	11	18	27	58	2	9	13	27	51	109
29	3	10	17	25	55	2	9	12	27	50	105
30	2	10	19	28	59	2	10	16	30	58	117
31	3	8	18	27	56	3	10	15	26	54	110
Mean Daily Total by Class	2	10	19	30	60	2	8	13	30	54	114

The boats classified as A, B, C, and D in the above table are as follows:

Class A: Steam launches, the dimensions of which in meters do not exceed, length 25, beam 5.5, and draft (when loaded) 1.37 (=4.5 ft.).

Class B: Large boats with the following range of dimensions in meters, length 12 to 24, beam 2 to 5, draft up to 1.2.

Class C: Medium size boats with dimensions in meters ranging from length 5.5 upward and with beam 1.2 upward.

Class D: Small fishing boats smaller than those in the aforementioned classes.

Meteorological data of this character, obviously increase in usefulness with the length of the period during which they are gathered. It is expected that this work of gathering evaporation data will be continued until such time as a sufficient amount of data has been obtained. In the hydrological computation on the Kinshui Project a knowledge of the rate of evaporation from land and water surface is necessary for authoritative conclusions, but as sufficient actually observed data are not yet available an approximate value of this rate has been computed by the use of basic data on observed values of vapor pressure, relative humidity and wind velocity. Fortunately the Customs has made direct or indirect observations on these factors at Hankow for many years past. In order to compute, from the basic information of vapor pressure, relative humidity and wind velocity, the probable evaporation on the Kinshui basin it is necessary to translate the experience of other countries where these factors have been linked experimentally with evaporation. The Department is fully cognizant of the limitations of this method as applied to the district around Hankow where experimental work of this character has not been done yet, and presents its conclusion as deduced by this method concerning the probable evaporation on the Kinshui basin, as the best possible at the present time. The deductions shown graphically on Plate 129 must be interpreted with these limitations in mind.

Similarly the rate of transpiration of water from plant areas is calculated from known observed data that are applicable to local conditions. The seepage losses are doubtless small (and therefore ignored in these calculations) since the soil is very hard, compact, and non-porous, and not far above sea level.

(e) *Boat Traffic on the Kinshui*

As one of the important conditions underlying the solution of this problem, boats engaged in commerce must be given facilities to pass into and out of the dike enclosures to be protected by the proposed structures. In order to gain an idea of the extent of this traffic a recorder was stationed at Yukwanshan to observe and note all boat traffic passing daily in both directions. Continuous records were taken from June to the end of the year covering a period of seven months. As this period is hardly sufficient to furnish data complete enough upon which a working estimate could be formed for the purpose, this work will be continued in the following year.

water surfaces and land areas, from transpiration of plants, and from seepage. See Plate 129.

Rainfall. The Customs Administration has kept complete rainfall and other weather records for many years in the past for Hankow and Yochow, of which those for the years 1880-1926 are available for Hankow and for the years 1910-1926 for Yochow. As the Kinshui is between Hankow and Yochow, the records of these two places are taken as the basic data in the study of the meteorological data of the Kinshui.

The table hereunder gives some valuable data selected from the records for the 46 years at Hankow.

RAINFALL RECORDS AT HANKOW FOR PERIOD 1880-1926
in millimeters

Month	*Average monthly Rainfall 1880-1926*	*Maximum Rainfall 1880-1926*		*Rainfall for 1889**	
		Monthly	*Year of Occurrence*	*Total monthly*	*Number of days*
January	45.3	172.2	1887	37.8	9
February	48.6	149.9	1882	77.7	11
March	94.9	251.7	1920	124.0	10
April	148.0	494.5	1913	178.1	17
May	169.1	392.2	1898	232.9	21
June	236.0	819.9	1887	597.2	16
July	181.7	533.9	1901	169.4	13
August	95.9	456.4	1906	81.3	10
September	72.7	414.8	1915	314.7	17
October	80.7	278.9	1886	229.6	20
November	48.8	226.1	1918	61.5	12
December	27.4	131.8	1899	1.3	5

*Year of largest total yearly rainfall which equaled 2105.5 mm.

Evaporation and Transpiration. The Customs has not kept records on evaporation data in the past at any station in the Middle Yangtse. For the purpose of ascertaining the extent of this phenomenon in this region, the Survey Department decided to establish two observation stations, one on the Kinshui at Yukwanshan, the other on the Futaohu at Miaochui. At each of these places, two evaporation pans were placed, one on the ground and under shelter, the other over the water surface and exposed to the sky and weather. Daily readings were taken commencing at Yukwanshan from the 1st of July and at Miaochui the 1st of August. The maximum and minimum temperatures, and the depth of rainfall, if any, for each day with notes on other weather conditions were also recorded at each station.

backwater period at this station extended from May 25 to about July 11, when, due to the inrushing of Yangtse River water through the dike breaks at Hsiao Chia Chow about 17 kilometers above Farmer Bend, the Kinshui current was suddenly reversed and resumed its downward direction. The discharge measurement data and diagrams are given in another section of this report.

Water level gages were established on the Kinshui at Kinkow and Yukwanshan and at the head lakes, Luhu and Futaohu, from which daily readings were taken, recorded, and plotted. See Plate 4. From this diagram the fluctuation of water level on the river and the lakes for any day may be ascertained.

(c) *Topography of Yukwanshan and Chihchishan*

Plate 133 shows a general topographic map of both Yukwanshan and Chihchishan on the Kinshui on which are outlined the positions of the lock with its sluice gates, the dam across the stream, and the canal to carry the diverted water to and through the lock and sluice gates.

Plates 134 to 135 show detailed topographic features of Yukwanshan and Chihchishan respectively. On these maps are indicated, beside the one-meter contour lines, the positions of surface rock outcrops, borings with the elevation of the subsurface rock strata noted whenever found, and open testpits and dikes. In the investigation of the elevation of the subsurface rock open testpits were in the beginning dug but later with the acquisition of boring implements the more efficient method of boring was adopted with satisfactory results. By the end of the year the boring work had not yet been completed but the results obtained are shown on these two plates.

(d) *Meteorological Data on the Kinshui*

The information on the runoff of the Kinshui is essential and necessary in the study of this project, but the time during which the Survey Department has made hydrological observations in this area has been so limited that adequate and completely observed data are not yet available. However, in order to obtain a reasonable figure on the runoff of the river which is necessary in the computation for the dimensions of the lock and sluice gates the monthly runoff has been calculated based on other physical data and records gathered by other institutions during past periods of considerable length.

The runoff or streamflow of a river consists of the residual rainfall after all losses have been deducted. These losses are principally through evaporation from

chiao, Kiangchiao, Matung, Pigeon Island, Chenwen, Teian, Kingchi, Tatung and Huangwan.

Anhwei Province: Susang, Wangkiang, Tungliu, Huaming, Kweichieh, Wuhu, and Hsuancheng.

The year 1926 was a record year in flood history and the great losses in property, life, and trade were investigated and recorded.

(C) THE KINSHUI PROJECT

The investigation of the Kinshui Project commenced in the previous year was continued during 1926 in greater detail. This project, as has been outlined before consists of building a lock with an earth dam on the Kinshui near Yukwanshan (or Chihchishan) about 7 kilometers above the river's mouth to prevent the waters of the Yangtse from backing up the Kinshui into the dike-enclosure and at the same time to permit boat traffic on this stream. A proposal of this kind involves not only an expenditure of money of considerable amount but requires as a matter of good engineering a thorough knowledge of all the elements that affect the design, erection, and maintenance of such a structure. In order to obtain as much as possible this information with the limited facilities at the disposal of the Department a somewhat detailed study was made of the various elements that constitute this problem, the principal ones of which are briefly mentioned hereunder.

(a) *The Kinshui Drainage Basin*

On outline survey of a portion of the basin was made from which a map could be produced showing the topography up to high flood line, the soundings in the lakes, and the location of the dikes and the main stream with its various tributaries. During the year under review about two-thirds of the field survey was completed. The results are shown on the two maps, Plates 136 to 137. Only a rough preliminary estimate of the reclaimable area of this basin was made by the reconnaissance party but with the completion of the surveying and mapping an accurate measurement for area will be made.

(b) *The Discharge and Water Levels of the Kinshui*

In connection with the investigation of the hydrology of the Kinshui Basin, discharge measurements were periodically taken of the Kinshui. A cross section of the river at Yukwanshan near the site of the proposed lock and dam was established and gagings were taken with a frequency of 4 or 5 per month during the entire year of 1926 excepting the month of January only. During the year the

SECTION VI
FLOOD PREVENTION

(A) GENERAL SCHEME OE INVESTIGATION

The investigation and study of flood prevention problems and the gathering of various topographic and hydraulic data bearing on such problems that was commenced in the middle of June, 1925, was continued from the beginning of 1926 and carried through the year with a considerable amount of interruption due principally to local military activity. It was very unfortunate that it became necessary to curtail in the summer the study of the special project at Kinshui as it was extremely desirable that this work should be continuous throughout the year.

However, what has been accomplished during the year in this branch of the Department's activities is a continuation of the previous year's endeavors, amplified and broadened to some extent. *The general scope of the work may* be stated as follows:

1. The gathering and recording of data in the various hsiens.
2. Special investigation of the Kinshui Project.
   a. Survey of the Kinshui Drainage Basin
   b. Discharge measurements and water levels of the Kinshui
   c. Topographic maps of Yukwanshan and Chihchishan
   d. Meteorological data on the Kinshui and their bearing on the problem
   e. Boat traffic on the Kinshui at Kinkow
   f. Designing and estimating of *structures*
3. Special survey of dikes

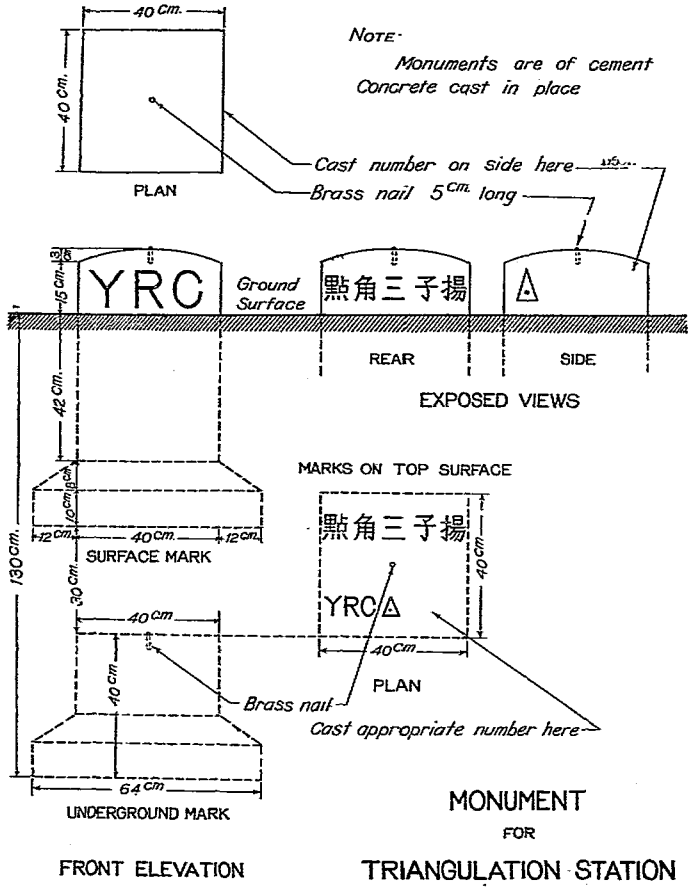
The topics above mentioned will be briefly treated below in the order given.

(B) GATHERING AND RECORDING OF DATA

On outline of the method with which this work of gathering and recording data systematically has been already given in the previous report. By this same procedure the following places were *during the year 1926 investigated and the* results obtained recorded:

Hupeh Province: Sienning, Mienyang, and Puchi hsiens

Kiangsi ,, Sengchiawan, Huangmaotang, and Mahuati (where dike breaks occurred); Siaochikow, Charchiachen, Erhtaokow, Oliphant Island, Linshui-



MONUMENT FOR TRIANGULATION STATION

(B) OBSERVATION

Observing was commenced in Hankow at the beginning of the year using the powerful Cooke theodolite especially imported for the purpose. This work was not carried on continuously during the year, because on several occasions it was necessary for the men doing observation to suspend operations to assist other field parties in the work of baseline measurement and of important topography. In the latter part of August observing ceased until the end of the year on account of military interference.

The initial work at Hankow was that of establishing a connection between our system and that of the Navy, and this necessitated the occupation with the theodolite of several of the latter's stations there.

For station signals long round poles with painted black and white horizontal boards made satisfactory targets. On account of the heavy haze almost continuously permeating the atmosphere over the Hankow district, it was found frequently necessary to make observations at night, using powerful acetylene lamps for signals.

During the observing period from March to August a total of sixteen stations were occupied including the baseline terminals and the same number were sighted upon. These stations are located from Hankow to Kinkow.

(C) COMPUTATION

On account of the limited amount of field work accomplished during the season because of the military situation the results of the computations for adjustments and for latitude and longitude of stations and back and forward azimuth of lines will be given in the report for the following year, which it is hoped may be comprehensive on the triangulation of the river above Hankow.

(D) MONUMENTS

The drawing on the next page shows the character of the station monuments which the Department has employed to mark station points.

Standardized steel tapes were used in all baseline measurements each one corrected for pull, temperature, sag, and alignment. The measurements were reduced to mean sea level. Three measurements of each of the two baselines were made. The accuracy possible in the determination of the length of a baseline depends on the precision with which the various constants of the measuring tape have been obtained and the precision with which the field work has been done. The measure of precision, called the uncertainty, as obtained in the several measurements is given in the following table.

Baseline	*Mean Length in meters*	*Probable error in meters*		*Uncertainty of the Mean Length*	
		2 selected values	*3 values*	*2 selected values*	*3 values*
B_1 - B_2	3375.9665	±0.00105	±0.03622	$\frac{1}{835,000}$	$\frac{1}{93,000}$
B_5 - B_6	4374.9935	±0.00317	±0.00590	$\frac{1}{1,380,000}$	$\frac{1}{742,000}$

(b) *Selection of Stations*

The various triangulation stations were chosen with due regard given to certain important features. In this work considerable difficulty was met by the presence of trees interfering with the visibility between stations and in some localities by the absence of high points. Whenever practicable such trees were removed and station towers were erected on low ground to see over obstructions. The location and description of each station is recorded in the form of a sketch on which all essential features are noted. The station mark itself is a concrete column 60 cm. in height with a cross section 40 cm. x 40 cm. This object is buried perpendicularly in the ground with 15 cm. of the upper end exposed above the ground surface. In the center of the exposed horizontal face has been embedded a brass nail the head of which is the station point. A structure like this partially exposed above ground is subject to the possibility of disturbance by various causes. In order to decrease the hazard of loss of a station mark, a second monument is buried under the surface monument in the manner indicated on the drawing hereunder. This underground mark is used only when there is reason to believe that the surface one has been tampered with or when it has been removed. It is similarly marked as the other for identification.

SECTION V
TRIANGULATION

The triangulation reconnaissance of the Middle Yangtse that was commenced at Hankow the early part of 1925 and carried out through the balance of that year was continued from the beginning of 1926. Unfortunately a report for continuous activity for this second year cannot be made on account of military interruptions extending from August throughout the rest of the year. However during the seven or eight months that triangulation work was carried on, considerable progress was made and all computations based on the results observed in the field were completed. In an effort to describe briefly the execution of this work its scope may be considered as covering in general the following parts: reconnaissance, observation, and computation which will be treated below in order. The various methods employed in both field and office work were standard methods as adopted by the United States Coast and Geodetic Survey for a similar class of work.

(A) RECONNAISSANCE

Reconnaissance consists of the preliminary work of examining the country to be surveyed, choosing and marking the various baseline and angle stations, clearing the country whenever necessary and possible of trees and other obstacles that interfere with the visibility between such stations, determining the required height for tower stations, etc. It was planned that as soon as a considerable portion of this work had been completed on the Middle Yangtse, other phases of the triangulation program would be taken up in turn. Accordingly when the reconnaissance had reached Hosueh in the end of January of 1926, about 40 kilometers above Shihshow, the men of the party transferred their attention to baseline measurement and observing work.

(a) *Baselines*

The extent of territory reconnoitered from Hankow to Hosueh measured approximately through the axis of the scheme 315 kilometers and in the length of this course two baselines were established and measured, the first one on the right bank below Wuchang and the second on the left bank across the river from Chenglingki. In addition the Chinese Navy baseline below Hankow belonging to that organization's system of triangulation from Hankow to Woosung was remeasured.

Custom House, Wuhu
„ „ Kiukiang
Church Building, Kienli
Custom House, Ichang
Church Building, Yochow (Siang River)

These bronze benchmarks as with similar ones established in the previous year were erected with the co-operation of the local authorities concerned in conspicuous positions in prominent edifices, where they are to remain as permanent records accessible to the public.

A total of 56 sketches have been prepared showing the location and other descriptive data of all the benchmarks leveled during the year.

The following table gives in brief the total number of the various classes of benchmarks heretofore established by the Department on the Yangtse.

BENCHMARKS ESTABLISHED ON THE YANGTSE
1922-6

CLASS	*Woosung-Hankow Dist. 1125 kms.*	*Hankow-Ichang Dist. 645 kms.*	*Woosung-Ichang Dist. 1770 kms.*
Benchmarks (B. M.)	332	209	541
Temporary Benchmarks (T. B. M.)	592	314	906
Bronze B. M.	9	5	14
Descriptive Sketches	566	160	726

A description with illustration of each of the several classes of benchmarks erected by the Department has been given in the previous issue of the Annual Report.

principal Middle Yangtse trade ports are plotted on a diagram shown on Plate 3.

On Plate 4 are shown similarly the simultaneous water levels of the several tributaries that flow into the Middle Yangtse where the Department has maintained gages during the year. On the same drawing are shown also simultaneous water levels of the Middle Yangtse at the principal stations in order that comparative studies may be conveniently made.

All these gages from which readings were taken and plotted have been tied to a common datum by the line of precise levels. The slope of the river on any day of the year can easily be calculated from the data shown graphically by these curves.

In the Department's different previous Annual Reports diagrams showing slope lines connecting the zeros of gages for certain sections of the Yangtse River have been shown with the corresponding longitudinal water surfaces. For the sake of convenience and clearness slope lines for zeros of gages and certain water surfaces for the entire Lower, Middle and Upper Yangtse, that is, the length of the river from Woosung to Chungking have been drawn on one diagram and presented on Plate 148.

Plate 149 shows longitudinal profiles of the water surfaces of the Kinshui from Kinkow to Luhu on certain representative dates; it has been prepared in connection with the investigations being made on that river. The river bed profile and various data on water levels are also shown on this sheet.

(D) BENCHMARKS

In the distance of 125 kilometers from Tafuchieh to Ichang over which the precise level party completed its work during the first part of the year, 36 permanent, 95 temporary, and one brass benchmarks were established. In the distance of 87 kilometers along Siang River from Chenglingki to Laishihshan 23 permanent and 65 temporary benchmarks were established.

In addition to the above mentioned benchmarks 8 bronze benchmarks were erected during the year at the following places:

Custom House, Chinkiang
Southeastern University, Nanking
University of Nanking, "

1.67 mm $\sqrt{637}$

which is well within the limit of tolerance.

After the completion of the Woosung-Ichang precise level line, it was planned to establish a branch line along the Siang River with the junction at Chenglingki. This work was commenced in April but owing to serious local military disturbances it was suspended in the latter part of June and remained so for the balance of the year. However a distance of 87 kilometers was completed along the Siang from Chenglingki to Laishihshan where the precise levels have been checked in their forward and backward runs by 6.48 millimeters or

0.69 mm $\sqrt{87}$

By considering the line from Woosung to Laishihshan via Chenglingki as a single continuous line, the precise levels have been checked with a discrepancy of 8.43 millimeters or

0.22 mm $\sqrt{1455}$

which is less than 1/20 of the allowable error.

(B) ORDINARY LEVELS

As with all precise leveling work heretofore undertaken by the Department, check leveling or leveling with the ordinary level has always accompanied it excepting only where there are benchmarks previously established by other organizations whose elevations could be utilized such as those in that section in the Lower Yangtse from Woosung to Wuhu.

Plates 146 to 147 show results obtained by precise and check leveling made during a limited period of time in 1926.

(C) SIMULTANEOUS WATER LEVELS

As mentioned in the previous Annual Report the Yangtse River Commission water level gages in the Middle Yangtse were established there during the last half year of 1925 when the Department's hydrometric activities were transferred there from the Lower Yangtse and therefore the readings recorded and reported for that year did not cover a complete cycle of the four seasons. These gages, however, were maintained from the beginning of the following year until the desired twelve month period for each station has been attained. The readings of these gages taken during their respective periods of maintenance as well as those taken by the Customs at the

SECTION IV
LEVELS AND SLOPE

(A) PRECISE LEVELS

The precise level line commenced at Woosung at the mouth of the Yangtse and carried up the river along the banks was terminated at Ichang on the 26th of March, 1926, covering a total distance of 1770 kilometers (about 1100 statute miles) for the entire course from Woosung to Ichang. With the completion of this precise level line and its numerous related benchmarks the elevation of any point on the Lower and Middle Yangtse above Woosung tide gage zero may now be easily ascertained.

In the beginning of the year the precise level line was resumed at Tafuchieh where it ended at the close of the previous year and the remaining distance of 125 kilometers from this point to Ichang was completed within the first three months of this year. This distance has been checked in its forward and backward runs by 25.35 mm or

$$2.260 \text{ mm } \sqrt{125}$$

the allowable limit being

$$5.000 \text{ mm } \sqrt{\text{distance (one way) in kilometers}}$$

The error is therefore less than 1/2 of the permissible amount.

By considering the line from Hankow to Ichang the precise levels have been checked in their forward and backward runs by 30.86 mm. in that distance of 645 kilometers, or

$$1.215 \text{ mm } \sqrt{645}$$

which is about 1/4 of the permissible error.

By considering the entire line as from Woosung to Ichang the precise levels have been checked very closely the discrepancy being only 31.52 millimeters in a distance of 1770 kilometers or

$$0.750 \text{ mm } \sqrt{1770}$$

which is only 1/7 of the permissible error.

The maximum discrepancy at any one point occurred at B. M. 581 a short distance below Ichang and 637 kilometers above Hankow where the difference was 42 millimeters. This corresponds to

they were reduced to two-thirds size so that the final printed maps have the desired scale of 1 to 25,000.

In connection with the studies that were made on flood prevention and control several special topographic maps have been prepared. Plate 133 shows a general topographic plan of Chihchishan and Yukwanshan indicating a position of the projected lock, dam, and the canal. Plate 134 shows a map of Chihchishan and Plate 135 of Yukwanshan on each of which are shown beside the topographic features the location of the borings and open test pits made thereon in the investigation of rock levels.

SECTION III

TOPOGRAPHIC DATA

(A) FIELD WORK IN TOPOGRAPHY

The general field topographic work that has been undertaken regularly in previous years was considerably restricted during the year 1926 on account of military interference and the unprecedented floods. After the work in making topographic cross sections had been completed in 1925, it was planned to transfer the personnel of the topography party to the Siang River and Tungting Lake districts to pursue work in the following year along the same lines as it had done in the past in the various areas on the Yangtse River. Unfortunately, for reasons given above, only a small part of this program has been carried through during the year; that is, it was only in the months of May, June and July that the topography party was able to work on the Siang River below Siangyin.

It is hoped, however, that normal conditions would return so that the important work of general topography originally outlined could be resumed and pushed through until its completion. Special topographic work having a bearing on flood prevention study and the gathering of data on this subject has been done by this party during the year and is described elsewhere in this report.

(B) TOPOGRAPHIC MAPS

During the year three large topographic maps on the Poyang Lake area were completed, printed, and published. These maps, which are hydrographic as well as topographic as they contain soundings of the lake and other information on water levels, cover three of the four districts of the lake which have been surveyed by topographic and sounding parties. The office work on the remaining map is nearly completed. The three newly published maps embrace the following districts of the lake: (1) Hukow to Pingfengshan, (2) Pingfengshan to Tungpienshan, and (4) Tachishan to Huangkintsui; while the remaining map covers the third district (3) Tungpienshan to Tachishan.

The preparation of these maps in the Shanghai office has been made along the same general lines as those previously published. The original office maps were drawn on a scale of 0.00006 and in the process of photographing for reproduction

AVERAGE AMOUNT OF SILT IN THE YANGTSE

HANKOW STATION

Date 1926	Stage of River (Hankow Customs Zero) in feet	in meters	River Discharge in cubic meters per second	Silt in parts per million by weight	Silt Discharge in metric tons per second
January 17	4.6	1.40	7,200	214	1.540
February 24	9.0	2.74	9,800	231	2.261
March 13	17.0	5.18	15,600	240	3.742
" 31	14.4	4.39	13,600	188	2.558
April 22	15.5	4.72	14,400	336	4.840
" 28	18.0	5.49	16,400	258	4.230
May 13	23.0	7 01	20,800	420	8.740

CHIHKIANG STATION

	Chihkiang (Y. R. C. Gage Zero)				
January 6	4.0	1.22	4 880	120	0.585
" 18	4 7	1.43	5,410	248	1.340
February 3	2.6	0.79	4,190	80	0.335
" 17	3.2	0.98	4,470	94	0.420
March 8	5.1	1.55	6,620	592	3.918
" 25	4.1	1.25	4,990	49	0.244
April 11	6.0	1.83	9.140	99	0.905

CHENGLINGKI STATION

	Chenglingki Customs Zero				
January 8	3.7	1.13	7,730	400	3.090
February 3	2.6	0.79	6,530	355	2.318
March 29	13.1	3.99	13,040	193	2.519
April 14	7.8	2.38	9,110	285	2.595
May 4	12.3	3.75	13,200	388	5.120

SZEPAKOW STATION

January 23	7.6	2.31	5,040	510	2.570
February 18	10.0	3.05	4,820	258	1.244
March 16	16.6	5.05	4,850	290	1.407
April 16	11.0	3.35	5,370	282	1.512
May 5	16.7	5.08	8,020	460	3.690

AVERAGE AMOUNT OF SILT IN THE SIANG RIVER

SIANGYIN STATION

Date 1926	Stage of River (Siangyin Customs Zero) in feet	in meters	River Discharge in cubic meters per second	Silt in Parts per million by weight	Silt Discharge in metric tons per second
February 28	15.7	4.79	2,660	126	0.335
March 23	20.0	6.10	3,970	177	0.702
" 31	10.8	3.29	1,600	44	0.070
April 16	13.0	3.96	1,420	100	0.142
May 10	14.0	4.27	1,950	152	0.296
" 25	15.3	4.66	1,570	125	0.196

1 metric ton = 1000 kilograms.

(E) RAINFALL

Rainfall reports received for the year 1926 from the Department's various stations distributed throughout the Yangtse drainage basin are incomplete but in view of the continued disturbances in the interior and the great distance through which these reports were sent the difficulties can be surmised to maintain continuous and uninterrupted gage readings and forward them to Shanghai with regularity. In several places where the conditions were so abnormal the readings were suspended during parts of the year. The Department takes pleasure in recording its continued appreciation for the admirable co-operation which the Fathers in charge of the Roman Catholic Mission where our rain gages are installed, have shown, especially under trying conditions, in aiding in the collection of these important rainfall statistics. See Plates 125 to 128.

(F) SILT DETERMINATION

The work of collecting water samples for silt determination purposes in the Middle Yangtse discharge measurement stations that has been carried on in the previous year during the same periods that discharge measurements were made, was continued from the first of the year 1926 until April or May when these measurements were terminated. This work that has been maintained at Hankow station in previous years was recommenced in January, 1926 but terminated in the following May. The taking of water samples from the Siang River at Siangyin was commenced in February, 1926 but this work was suspended after a period of only four months as was all hydrometric work in this district. See Plates 130 to 132.

The same general procedure was adopted in the sampling of river water as has been followed in previous years. At each station, specimens were at each time collected at four representative places on the cross section of the river and in each case at the following depths; surface, one-third depth, two-third depth, and the bottom. The percentages given in the tables hereunder are averaged for the entire cross section.

(C) SOUNDINGS IN HANKOW CROSSING

This branch of the hydrometric work that was undertaken early in November, 1925 was continued in the following year up to and including the month of May, 1926 covering the low water season a period of about 7 months. A general outline of this work has been given in the 1925 Annual Report but as this work now covers one complete low water season, a brief description of it is now given.

Thirteen parallel section lines averaging in length about 1900 meters were established at fixed intervals of distance apart across the river at the Hankow Crossing. The sounding depths observed were reduced to the Customs gage zero and plotted on sheets, one for each complete sounding. From the same data, vertical cross sections were plotted to the same scale one superimposed over another.

In addition to the sounding of the crossing, observations on the direction and velocity of the current were also taken at the time of the sounding by means of floats. These floats, 5 in number, were released on a line across the river at approximately equal intervals of distance from each other and from the banks. The distance through which they traveled was about 5000 meters. Their successive positions as they floated downstream were, with the corresponding time, noted. From the intervals of distance and time thus obtained the velocities and direction of current from position to position could then be computed.

Plate 69 shows a key plan of the Hankow Crossing on which are located the cross section lines and the lines of the floats. Plates 70 to 88 show the soundings and Plates 89 to 122 the vertical cross sections based on the sounding depths taken.

(D) CHANGES IN BED ELEVATIONS

For the purpose of making a study on the changes of bed elevations, that is the nature of scouring and silting, cross sections of all the regular gaging stations located on the several tributaries flowing into the Middle Yangtse have been plotted in condensed form and are shown on Plates 123 to 124. The soundings utilized were those selected on certain dates to show the bed elevations and water levels for each station when the river surface was at its highest and lowest and at certain intermediate heights.

VARIATION OF WATER LEVEL, SLOPE, AND VELOCITY

CHIHKIANG GAGING STATION

1926		Water Level at Gage (above W.H.Z.)			Drop from A to C (Dist. 2 km.)	Mean Vel. at Sta. B m/sec.
Date	Time	A	B	C		
January 23	8.00 a.m.	38.471m.	38.451m.	38.409m.	0.062	0.660
	Noon	38.476	38.452	38.413	0.063	0.660
	4.00 p.m.	38.473	38.449	38.406	0.067	0.653
February 9	8.00 a.m.	38.606	38.578	38.556	0.050	0.699
	Noon	38.610	38.581	38.562	0.048	0.701
	4.00 p.m.	38.613	38.583	38.567	0.046	0.706
March 21	8.00 a.m.	38.457	38.428	38.410	0.047	0.691
	Noon	38.461	38.433	38.413	0.048	0.696
	4.00 p.m.	38.459	38.434	38.415	0.044	0.700
April 19	8.00 a.m.	40.165	40.111	40.087	0.078	1.017
	Noon	40.239	40.183	40.162	0.077	1.055
	4.00 p.m.	40.286	40.233	40.218	0.068	1.080
May 15	8.00 a.m.	40.964	40.894	40.875	0.089	1.330
	Noon	40.893	40.825	40.805	0.088	1.272
	4.00 p.m.	40.817	40.752	40.733	0.084	1.276

CHENGLINGKI GAGING STATION

1926		Water Level at Gage (above W.H.Z.)			Drop from A to C (Dist. 2 km.)	Mean Vel. at Sta. B m/sec.
Date	Time	A	B	C		
January 20	8.00 a.m.	18 609m.	18.580m.	18.473m.	0.136	0.961
	Noon	18.622	18 593	18.488	0.134	0.982
	4.00 p.m.	18.638	18.621	18.509	0.129	0.947
February 20	8 00 a.m.	19.908	19.880	19.828	0.080	1.018
	Noon	19.905	19.879	19.829	0.076	0 979
	4.00 p.m.	19.913	19.882	19.832	0.081	0.995
March 12	8.00 a.m.	22.273	22.239	22.197	0.076	1.075
	Noon	22.275	22.239	22.198	0.077	1.080
	4.00 p.m.	22.283	22.247	22.206	0.077	1.094
April 22	8.00 a.m.	22.385	22.362	22.330	0.055	1.248
	Noon	22.447	22.429	22.400	0.047	1 261
	4.00 p.m.	22.520	22.499	22.470	0.050	1.292
May 18	8.00 a.m.	24.719	24.709	24.679	0.040	1.202
	Noon	24.704	24.694	24.668	0.036	1.211
	4.00 p.m.	24.692	24.683	24.652	0.040	1.190

(Gage B is located at the gaging cross section; gages A and C are located respectively one km. above and one km below gage B).

mean discharge, so calculated, and the total daily discharge for each gaging station on the Middle Yangtse are given for the 12 month period, 1925-6.

Station	*Annual Mean Discharge cu. m/sec.*	*Total Daily Discharge million cubic meters*
Chenglingki	20,600	1,780
Szepakow	10,900	940
Chihkiang	16,600	1,430

The great loss in discharge of the river in the course of its flow from Chihkiang to Szepakow is explained by the presence of so many rivers leading from the Yangtse to Tungting Lake. The main river however then recovers its volume after reaching Chenglingki where the Siang, the outlet of Tungting Lake, debouches into the Yangtse.

(h) *Variation of Water Level, Slope and Velocity.*

The endeavor to establish some relationship between the variation of water level, slope of river, and velocity of current in a given interval of time at the stations Chenglingki and Chihkiang, begun in the middle of 1925, was continued in the following year for several months.

As explained in previous annual reports the following procedure was adopted. Once a month on the day of gaging, the velocity of the river cross section was measured at 8 o'clock in the morning, at noon and at 4 in the afternoon. This means that three independant sets of current meter readings from river surface to bottom and one complete sounding of the entire cross section were taken between dawn and dusk of the same day.

On the day of the gaging, the slope of the river was ascertained by leveling between the sections and points established, one kilometer above and one kilometer below the section. At this section and at the two points, gages (3 in number) were installed where readings of the water surface were taken and recorded at 2 minute intervals, beginning 10 minutes before the current meter measurement and ending 10 minutes after it.

The following tables give a summary of the results thus obtained in 1926 at the two stations where observations have been made.

(g) *Magnitude of Discharge*

From the tables above and those given in the preceding Annual Report the following figures for the maximum and minimum discharge are found. They are all observed values unless otherwise indicated.

Station	River	Measurements		Discharge in cu. m/sec.			
		Period Taken	No.	Maximum	Date	Minimum	Date
Chenglingki	Yangtse	6/1925-5/1926	31	37,960	17/9/25	6,580	3/2/26
Szepakow	,,	7/ ,, 5/ ,,	26	20,620	19/8/25	4,820	18/2/26
Chihkiang	,,	6/ ,, 5/ ,,	18	49,370	11/9/25	4,190	4/2/26
Sungtse	Sungtse	6/ ,, 5/ ,,	12	7,650	8/9/25	200	11/1/26
Yukwanshan*	Kinshui	Feb.-Dec., 1926	45	1,950	18/8/26		
Luchikow	Lushui	,, ,, ,,	37	540	10/7/26	12	10/2/26
Taokow	Taokowchi	,, ,, ,,	37	390	1/7/26	9	11/2/26
Taipingkow	Taipingho	June-Dec., ,,	19	2,380	23/7/26	30	22/12/26
Siangyin	Siang	Feb.-July, ,,	21	10,550	3/7/26	390	4/4/26
Haohokow	,,	,, ,, ,,	22	9,880	3/7/26	350	5/4/26
Lintsukow+	,,	March-July, ,,	22	1,100	2/7/26	55	2/6/26
Changteh	Yuan	June-Dec., ,,	25	13,020	6/7/26	700	23/11/26
Yiyang	Tze	June-July, ,,	6				
Owchikow‡	Owchihho	June-Sept., ,,	10	9,750	18/8/26		
,, ‡	Ansiangho	July-Sept., ,,	9	6,330	26/7/26		

*Owing to negative discharge due to reverse current the minimum positive discharge is therefore not definitely ascertained.

+Both values for discharge given here are negative.

‡No values for minimum discharge are given because the periods of observation are too short to include the low water season.

It is noted in the above table that the period of measurement for the first four stations covers an entire year, that is, a complete cycle of high and low water seasons, whereas the periods for the other stations are not so complete; but a sufficient range of time has been taken to include at most of these latter stations the times of occurrence of maximum and minimum discharge respectively.

By reference to the discharge curves on Plates 59 to 61 it is observed that the average ordinate under each curve should indicate the average discharge for the entire year for that station. This average is obtained by dividing the area under the curve by the length of the abscissa representing the entire year. The annual

DISCHARGE OF THE TAIPING
AT TAIPINGKOW

Date 1926	Discharge cu. m/sec.	Elevation Water Level (W. H. Z. datum) meters
June 8	770	38 18
„ 12	950	39.53
July 2	1,690	40.59
„ 9	1,840	41.26
„ 16	1,740	41.37
„ 23	2,390	42.18
Aug. 2	1,710	41.11
„ 9	2,250	42.36
„ 17	2,220	42.48
„ 24	1,050	39.33
Sept. 2	1,320	40.20
„ 10	770	38.40
„ 17	600	37.82
Nov. 9	380	36.93
„ 17	200	35.88
„ 24	150	35.64
Dec. 2	200	35.78
„ 9	145	35.56
„ 22	30	34.32

DISCHARGE OF THE SIANG
AT HAOHOKOW

Date 1926	Discharge cu. m/sec.	Height Water Level (Y. R. C. Gage Zero) meters
Feb. 27	1,430	4.88
March12	1,880	5.46
„ 16	1,020	4.37
„ 22	3,220	6.20
„ 27	1,300	4.60
April 1	600	3.02
„ 5	350	2.13
„ 15	1,040	3.45
„ 18	2,090	5.06
„ 26	660	3.61
May 5	850	3.58
„ 8	1,040	4.19
„ 12	1,730	5.31
„ 14	2,110	5.84
„ 21	1,260	4.80
„ 26	3,450	6.15
June 3	2,190	6.60
„ 9	1,880	6.17
„ 15	3,130	7.68
„ 26	4,370	8.66
July 3	9,880	10.87
„ 11	1,240	10.54

DISCHARGE OF THE SIANG
AT SIANGYIN

Date 1926	Discharge cu. m/sec.	Height Water Level (Customs Gage Zero) meters
Feb. 26	2,660	4.85
March 3	2,830	5.12
„ 10	3,600	5.88
„ 16	1,750	4.42
„ 22	3,970	6.19
„ 29	1,600	3.99
April 1	1,170	3.02
„ 4	890	2.38
„ 15	1,420	3.14
„ 18	2,760	4.91
„ 29	1,100	3.29
May 7	1,950	4.18
„ 12	2,600	5.43
„ 19	2,370	5.18
„ 24	1,570	4.60
„ 26	3,920	5.91
June 3	3,190	6.71
„ 15	4,410	7.71
„ 26	5,740	8.63
July 3	10,550	10.88
„ 9	3,290	11.10

DISCHARGE OF THE TZE
AT LINTSUKOW

Date 1926	Discharge cu. m/sec.	Height Water Level (Customs Gage Zero) meters
March 9	310	5.24
„ 14	440	4.30
„ 25	220	4.72
„ 29	440	3.38
April 2	670	2.35
„ 7	470	1.31
„ 14	470	1.65
„ 16	370	3 32
„ 18	210	4.21
„ 25	520	3.51
May 1	470	2.38
„ 7	510	3.69
„ 12	560	4.79
„ 19	510	4 54
„ 26	950	5.33
„ 27	310	6.65
June 2	55*	6.74
„ 8	700	5.43
„ 11	90*	6 77
„ 18	65	6.68
„ 24	585*	7.89
July 2	1,100*	9.82

*Negative discharge due to reverse current.

DISCHARGE OF THE TZE AT YIYANG

Date 1926	Discharge cu. m/sec.	Height Water Level (Customs Gage Zero) meters
June 11	3,790	6.13
" 15	1,770	4.82
" 22	1,040	4.18
" 24	2,610	5.61
" 29	3,650	7.71
July 7	2,310	7.16

DISCHARGE OF THE TAOKOWCHI AT TAOKOW

Date 1926	Discharge cu. m/sec.	Height Water Level (Y. R. C. Gage Zero) meters
Feb. 11	9	12.65
March 4	21	12.50
" 14	33	13.16
" 24	29	12.91
April 5	11	12.08
" 19	12	11.81
May 11	57	14.47
" 20	56	15.42
June 3	203*	18.19
" 10	128*	18.05
" 18	210*	19.16
" 24	167*	19.80
July 1	390*	21.27
" 10	250	23.45
" 17	195	22.74
" 24	89	22.52
" 28	117	22.61
Aug. 6	91	22.19
" 12	75	22.24
" 26	192	21.85
Sept. 3	136	21.08
" 10	129	20.40
" 17	188	19.34
" 24	217	17.90
Oct. 1	141	17.38
" 8	157*	17.96
" 16	53*	18.42
" 23	137	18.22
Nov. 1	162	17.28
" 8	180	16.26
" 15	139	14.97
" 22	67	14.03
Dec. 1	110	13.27
" 8	78	13.22
" 15	59	12.98
" 22	44	12.74
" 25	39	12.64

*Negative discharge due to reverse current. June 3-July 1; October 7-18: Periods of backwater at Taokow.

DISCHARGE OF THE HWAYUNG AT TIAOHSIEN

Date 1926	Discharge cu. m/sec.	Height Water Level (Y. R. C. Gage Zero) meters
June 4	550	9.75
" 11	500	9.21
" 24	630	10.39
July 1	865	11.39
" 8	1,200	13.03
" 16	1,110	12.52
" 23	1,210	12.42
Aug. 1	855	11.43
" 10	1,135	12.32
" 17	1,285	12.60
" 23	595	10.49
Sept. 2	690	10.53

DISCHARGE OF THE OWCHIH AT OWCHIKOW

Date 1926	Discharge cu. m. sec.	Elevation Water Level (W. H. Z. datum) meters
June 5	3,860	35.19
July 11	7,870	38.07
" 18	7,840	37.77
" 23	8,540	38.13
Aug. 5	8,230	37.46
" 11	9,610	37.92
" 18	9,750	37.95
" 24	4,450	35.40
Sept. 5	3,530	34.90
" 15	2,570	34.04

DISCHARGE OF THE ANSIANG AT OWCHIKOW

Date 1926	Discharge cu. m. sec.	Elevation Water Level (W. H. Z. datum) meters
July 10	5,930	38 07
" 17	5,180	37.63
" 24	6,330	38 21
Aug. 5	5,050	37.49
" 12	5,810	37.98
" 19	4,930	37.41
" 24	2,570	35.56
Dec. 5	1,730	34.87
" 15	1,400	34.06

DISCHARGE OF THE YANGTSE AT CHIHKIANG

Date 1926	Discharge cu. m/sec.	Elevation Water Level (W. H. Z. datum) meters
Jan. 7	4,880	38.47
" 15	5,410	38.59
" 23	4,870	38.29
Feb. 4	4,190	38.04
" 9	5,280	38.44
" 22	4,470	38.20
March 5	6,620	38.83
" 16	5,640	38.74
" 21	4,990	38.47
April 1	7,100	39.41
" 13	5,540	38.62
" 19	9,140	40.24
" 21	14,780	41.49
" 26	8,790	40.11
May 3	9,790	40.42
" 8	14,120	41.46
" 10	16,970	42.28
" 15	12,010	41.00
" 21	18,720	42.64

DISCHARGE OF THE LUSHUI AT LUCHIKOW

Date 1926	Discharge cu. m/sec.	Elevation Water Level (W. H. Z. datum) meters
Feb. 10	12	16.24
March 1	30	18.99
" 14	128	20.75
" 24	44	20.66
April 5	44	18.76
" 19	42	19.20
May 12	262	22.67
" 21	172	23.46
June 4	55*	26.39
" 11	44*	26.21
" 18	56*	27.21
" 26	87*	28.04
July 2	370*	29.99
" 10	540	31.48
" 16	223	30.94
" 23	89	30.63
" 31	130	30.57
Aug. 6	71	30.36
" 13	113	30.40
" 20	92	30.62
" 27	118	29.87
Sept. 3	56	29.24
" 10	125	28.58
" 16	117	27.64
" 26	90	25.82
Oct. 2	49*	25.54
" 9	86*	26.16
" 16	53	26.56
" 22	55	26.45
" 30	99	25.70
Nov. 5	34	24.83
" 12	29	23.69
" 19	29	22.16
Dec. 3	32	20.35
" 10	45	20.51
" 17	26	20.14
" 24	36	19.86

* Negative dischar

DISCHARGE OF THE SUNGTSE AT SUNGTSE

Date 1926	Discharge cu. m/sec.	Elevation Water Level (W. H. Z. datum) meters
Jan. 11	200	38.32
Feb. 18	210	38.22
March 9	360	38.71
April 3	460	39.17
May 19	1,760	41.06

DISCHARGE OF THE KINSHUI AT YUKWANSHAN

Date 1926	Discharge cu. m. sec.	Elevation Water Level (W. H. Z. datum) meters
Feb. 3	66	16.35
" 19	54	16.16
" 24	48	16.16
" 27	45	16.26
March 6	43	16.59
" 11	57	17.55
" 16	73	17.54
" 23	58	17.32
" 31	46	16.97
April 9	32	15.93
" 19	27	15.98
" 24	38	18.01
" 29	38	17.73
May 6	23	17.06
" 12	56	19.23
" 19	0	20.14
" 31	121*	21.79
June 7	158*	22.43
" 15	194*	22.93
" 24	266*	23.76
" 29	385*	24.55
July 5	1,010*	25.90
" 12	1,230†	27.44
" 20	1,850†	27.34
" 31	1,830†	27.61
Aug. 5	1,870†	27.60
" 12	1,900†	27.69
" 18	1,950†	27.84
Sept. 12	660	25.95
" 17	600	25.16
" 24	520	23.97
Oct. 1	367	23.15
" 7	313	23.18
" 14	187	23.48
" 21	143	23.15
" 28	188	23.08
Nov. 4	233	22.23
" 11	228	21.38
" 15	252	20.54
" 22	236	19.55
" 29	213	18.82
Dec. 6	188	18.54
" 13	168	18.39
" 20	151	18.03
" 27	141	17.93

*Negative discharge due to reverse current.
May 25-July 11: Period of backwater at Yukwanshan.
†Stream overflowing the banks.

the table on the same sheets where gaging numbers are placed after the month during which the corresponding gagings were made.

It will be noted that the discharge and velocity curves for stations Yukwanshan, Taokow, and Lintsukow on tributaries of the Yangtse show a short period of negative discharge and negative velocity due to reverse direction of normal river flow, that is, from the tributary's mouth back towards the source.

(e) *Variation of Water Level, Discharge, Area, and Velocity.*

Plates 59 to 68 show for each gaging station, the water level, sectional area, discharge, and mean velocity for any day during the period of measurement within the current year in the Middle Yangtse and Tungting Lake area. For those stations at which measurements had commenced in the preceding year, values obtained during that year have also been indicated on these sheets in order that as much as possible be represented on one sheet for each station.

(f) *Discharge Measurement Data Tabulated.*

The following tables present a summary of discharge measurements made by the Survey Department for all of its stations during their respective periods of observation within the year 1926. After each measurement is also shown the corresponding water level elevation.

DISCHARGE OF THE YANGTSE RIVER

AT CHENGLINGKI

Date 1926	*Discharge cu. m/sec.*	*Elevation Water Level (W. H. Z. datum) meters*
Jan. 8	7,730	18.86
„ 20	7,730	18.83
Feb. 3	6,530	18.47
„ 20	10,500	20.06
March 6	12,860	21.37
„ 12	16,520	22.42
„ 29	13,040	21.59
April 14	9,110	20.02
„ 22	19,610	22.19
May 4	13,200	21.41
„ 11	21,800	23.68
„ 18	25,210	24.92

AT SZEPAKOW

Date 1926	*Discharge cu. m/sec.*	*Elevation Water Level (W. H. Z datum) meters*
Jan. 4	6,010	20.12
„ 23	5,040	19.93
Feb. 18	4,820	20.74
March 8	6,560	22.69
„ 16	4,850	22.69
April 3	6,520	21.81
„ 16	5,370	21.04
„ 24	10,300	23.86
May 5	8,020	22.73
„ 12	10,950	25.01
„ 19	7,830	25.32

(4) *Curves of Equal Velocity.* Plates 42 to 46 show graphically the variation of velocity at the various gaging stations on the dates specified, one set showing the variation during the low water period and the other during the high water period. The dates selected however do not necessarily correspond to those on which the lowest or highest water level occurs during the year but they are well within the period as indicated.

The full lines are curves of equal velocity drawn in the usual conventional manner, analogous to contour lines, while the dashed lines show the depth at which the filament of mean velocities is found.

(d) *Discharge Rating Curves.*

Plates 47 to 58 show the rating curves of discharge, mean velocity and mean area at the various gaging stations enumerated hereinbefore, constructed from results of actual measurements. The rating curves are of course only average curves drawn through the plotted positions of the values of the determinations made.

For those on the main stream of the Middle Yangtse stations, such as Chenglingki, Szepakow, and Chihkiang and on the tributary Sungtse at Sungtse, not only have the values obtained during the first part of the current year 1926 been indicated on these sheets but also those determined during the preceding period commencing with the first measurements in the middle of 1925, representing therefore the results gathered during one complete year of continuous hydrometric work. For those of the stations located on the various tributary streams that flow directly into the Middle Yangtse, and on those in the Tungting Lake basin that contribute to the Yangtse waters through the Siangkiang, values have been obtained during periods that vary for each from a few months to a year, as measurements had commenced at different times of the year and terminated abruptly in many of them during the late summer or early fall due to local floods and military interference. For those curves that represent data collected through a period of only a few months, no pretense is made for their completeness but they are herewith presented as records with the expectation that they will be adequately supplemented at a later period.

The values for any particular gaging or any period of time can easily be ascertained from the plotted points which are numbered chronologically and from

(3) *Maximum Filament Velocities and Average Velocities.* The table below gives a list of maximum filament velocities that have been measured and a list of computed average velocities on certain specified dates at the various stations maintained during the year.

The dates selected represent for each gaging station the days of the occurrence of the lowest discharge and the highest respectively, measured during their respective periods.

MAXIMUM FILAMENT VELOCITIES AND AVERAGE VELOCITIES

Station	*Date*	*Elevation of Water Level in meters*		*Observed Maximum Filament Velocity m. per sec.*	*Computed Value of Average Vel. of whole Discharge m. per sec.*
		W.H.Z.	*Local Datum*		
Chenglingki	Feb. 3, 1925	18.47		1.470	0.905
,,	Sept. 17, 1925	28.31		2.590	1.665
Szepakow	Feb. 18, 1926	20.74		1.470	0.915
,,	July 9, 1925	27.16		3.480	2.465
Chihkiang	Feb. 4, 1926	38.04		1.020	0.585
,,	Sept. 11, 1925	47.93		4.365	3.480
Sungtze	Jan. 11, 1926	38.52		0.190	0.115
,,	Sept. 8, 1925	46.79		1.920	1.615
Yukwanshan	May 6, 1926	17.06		0.260	0.190
,,	Aug. 18, ,,	27.84		1.385	0.945
Luchikow	Feb. 10, ,,	18.24		0.410	0.290
,,	July 10, ,,	31.48		0.590	0.390
Taokow	Feb. 11, ,,		0.91	0.365	0.265
,,	July 1, ,,		9.53	1.050	0.835
Taipingkow	Dec. 22, ,,	34.32		0.150	0.115
,,	July 23, ,,	42.18		1.540	1.165
Siangyin	April 4, ,,		2.38	0.580	0.370
,,	July 3, ,,		10.88	2.401	1.760
Haohokow	April 5, ,,		2.13	0.350	0.220
,,	July 3, ,,		10.87	2.660	1.850
Lintsukow	June 2, ,,		6.74	0.100	0.060
,,	July 2, ,,		9.82	1.070	0.865
Changteh	Nov. 23, ,,		1.04	0.270	0.185
,,	July 6, ,,		7.77	1.920	1.585

Station	Month 1926	No. of curves Averaged	$\frac{V_m}{V_s}$	$\frac{V_m}{V_{0.2}}$	$\frac{V_m}{V_b}$
Owchihkow (Ansiang Ho)	July	3	0.884	0.886	1.340
	August	4	0.868	0.886	1.407
	September	2	0.888	0.897	1.265
Average for 3 months		(9)	0.880	0.890	1.337
Taipingkow	June	2	0.940	0.866	1.439
	July	4	0.853	0.835	1.617
	August	4	0.859	0.848	1.583
	September	3	0.910	0.851	1.384
	November	3	0.911	0.881	1.440
	December	3	0.850	0.866	1.484
Average for 6 months		(19)	0.894	0.858	1.491
Siangyin	February	1	0.959	0.922	1.219
	March	5	0.918	0.945	1.238
	April	5	0.928	0.920	1.329
	May	5	0.892	0.907	1.316
	June	3	0.896	0.922	1.291
	July	2	0.934	0.916	1.280
Average for 6 months		(21)	0.916	0.922	1.279
Haohokow	February	1	0.900	0.874	1.361
	March	4	0.855	0.874	1.569
	April	5	0.859	0.870	1.416
	May	6	0.850	0.869	1.545
	June	4	0.850	0.867	1.423
	July	2	0.948	0.918	1.279
Average for 6 months		(22)	0.877	0.879	1.432
Lintsukow	March	4	0.923	0.931	1.395
	April	6	0.946	0.960	1.229
	May	6	0.917	0.934	1.272
	June	5	0.942	0.895	1.450
	July	1	0.958	0.953	1.230
Average for 5 months		(22)	0.937	0.935	1.321
Changtch	June	4	0.885	0.888	1.464
	July	1	0.884	0.890	1.364
	August	4	0.890	0.888	1.510
	September	4	0.930	0.911	1.423
	October	4	0.843	0.855	1.557
	November	4	0.913	0.845	1.505
	December	4	1.049	0.948	1.385
Average for 7 months		(25)	0.911	0.892	1.458
Yiyang	June	5	0.867	0.888	1.368
	July	1	0.874	0.893	1.378
Average for 2 months		(6)	0.871	0.891	1.373

Station	Month 1926	No. of curves Averaged	$\frac{V_m}{V_s}$	$\frac{V_m}{V_{0.2}}$	$\frac{V_m}{V_b}$
Yukwanshan	February	4	0.925	0.896	1.259
	March	5	0.890	0.924	1.245
	April	4	0.884	0.925	1.192
	May	3	0.912	0.909	1.232
	June	4	0.884	0.903	1.372
	July	4	0.965	0.961	1.163
	August	3	0.954	0.936	1.193
	September	3	1.004	0.942	1.386
	October	5	0.910	0.879	1.536
	November	5	0.949	0.884	1.324
	December	4	0.993	0 890	1.364
Average for 11 months		(44)	0.934	0.914	1.291
Luchikow	February	1	0.935	0.921	1.317
	March	3	0.877	0.830	—
	April	2	0.809	0.830	—
	May	2	1.225	0.987	1.469
	June	4	0.675	0.742	2.644
	July	5	0.639	0.868	2.259
	August	4	0.465	0.709	2.453
	September	4	0.462	0.688	5.196
	October	5	0.403	0.861	3.618
	November	3	0.543	0.841	7.524
	December	4	0.706	0.976	1.669
Average for 11 months		(37)	0.703	0.841	3.121
Taokow	February	1	1.001	0.982	1.187
	March	3	1.011	0.915	—
	April	2	0.926	0.915	—
	May	2	0.927	0.885	1.518
	June	4	0.969	0.935	1.270
	July	5	1.013	0.878	1.475
	August	3	0.983	0.884	1.853
	September	4	1.093	0.886	1.569
	October	4	1.112	0.926	1.497
	November	4	1.100	0.924	1.219
	December	5	1.106	0.956	1.121
Average for 11 months		(37)	1.022	0.912	1.405
Tiaohsien	June	3	0.939	0.895	1.513
	July	4	0.933	0.908	1.474
	August	4	0.955	0.907	1.411
	September	1	0.954	0.923	1.467
Average for 4 months		(12)	0.945	0.908	1.451
Owchihkow (Owchih Ho)	June	1	0.886	0.875	1.387
	July	3	0.923	0.892	—
	August	4	0.889	0.906	1.362
	September	2	0.877	0.870	1.433
Average for 4 months		(10)	0.894	0.886	1.427

The following table shows the result of studies made of the vertical velocity curves that are represented by the graphs on the sheet described herein. The expressions $\frac{V_m}{V_s}$ represents the ratio of mean velocity to surface velocity; $\frac{V_m}{V_{0.2}}$ the ratio between mean velocity and average velocity at 0.2 depth; and $\frac{V_m}{V_b}$ the ratio between mean velocity and the average velocity at the bottom.

RATIO BETWEEN MEAN VELOCITY AND OTHER VELOCITIES IN THE SECTION

Station	*Month 1926*	*No. of curves Averaged*	$\frac{V_m}{V_s}$	$\frac{V_m}{V_{0.2}}$	$\frac{V_m}{V_b}$
Chenglingki	January	2	0.912	0.895	1.415
	February	2	0.874	0.888	1.368
	March	3	0.850	0.861	1.563
	April	2	0.858	0.871	1.458
	May	3	0.837	0.859	1.527
Average for 5 months, 1926		(12)	0.866	0.875	1.466
" " 7 " 1925		(19)	0.875	0.886	1.551
" " 12 " 1925-6		(31)	0.872	0.882	1.517
Szepakow	January	2	0.929	0.927	1.263
	February	1	0.912	0.905	1.385
	March	2	0.849	0.871	1.635
	April	3	0.890	0.895	1.450
	May	3	0.833	0.854	1.628
Average for 5 months, 1926		(11)	0.883	0.890	1.472
" " 6 " 1925		(15)	0.869	0.892	1.409
" " 11 " 1925-6		(26)	0.875	0.891	1.436
Chihkiang	January	3	0.885	0.890	1.441
	February	3	0.880	0.885	1.434
	March	3	0.910	0.899	1.429
	April	5	0.890	0.900	1.434
	May	5	0.918	0.917	1.333
Average for 5 months, 1926		(19)	0.897	0.898	1.416
" " 7 " 1925		(29)	0.920	0.919	1.398
" " 12 " 1925-6		(48)	0.911	0.911	1.409
Sungtse	January	1	0.964	1.002	1.084
	February	1	0.830	0.914	1.297
	March	1	0.770	0.815	1.376
	April	1	0.938	0.889	1.350
	May	1	0.837	0.871	1.490
Average for 5 months, 1926		(5)	0.872	0.905	1.301
" " 7 " 1925		(7)	0.836	0.877	1.442
" " 12 " 1925-6		(12)	0.863	0.889	1.383

the new water level gages in the Tungting Lake and the Lower Siang River districts is shown on Plate No 2. Plates 19 to 30 show the cross sections that have been taken at the gaging station in the main stream of the Middle Yangtse and that in the Sungtse River at Sungtse during the first five months of the year. Those cross sections that have been taken at these stations subsequent to this period have been shown in the previous annual report. Plates 31-35 show those taken in several of the tributary streams of the Middle Yangtse and Plates 36 to 38 those taken in the Siang River and its tributaries. As with similar drawings in previous reports, these cross sections give the elevation of water surface with the corresponding date for each gaging and the profile of the bed of the river and incidentally by comparison the important information as to the change in river bed resulting from silting and scouring.

A frequency of two or three gagings per month was made at the Chenglingki and Szepakow stations and of three to five at the other stations, excepting Sungtse where only monthly gagings were made.

(c) *Velocity in the Cross Section*

(1) *Vertical Velocity Curves.* For all the stations maintained during the year, current meter determinations of velocity were in general made in every instance at the surface and at the various tenths of the depth to the bottom. From the observed values of these velocities the vertical velocities have been drawn for convenience on the same sheets showing the cross section of the river. The value and location of the mean velocity are shown in every instance. Only one set of vertical curves for high water and one for low water are, or when the space is limited only one for either high or low water is, shown on each sheet but the results are typical of the entire work.

For the purpose of comparison the vertical velocity curves for the Middle Yangtse river discharge measurement stations, Chenglingki, Szepakow, and Chihkiang have been plotted in condensed form for every gaging made during the year and are herewith presented on Plates 39 to 41.

(2) *Mean Velocities.* Beneath the graphs of the velocity curves drawn on the same sheets showing cross sections, there are shown in a table the important ratios of (a) mean velocity to surface velocity, (b) mean velocity to velocity at 0.2 depth, and (c) mean velocity to bottom velocity.

A diagram showing the variations in maximum height, minimum height, and total range of the Siang River water level from year to year has been constructed from the Changsha records only, since data from the other stations in the Tungting basin cover too limited a period to be of any such use. See Plate 18.

(B) DISCHARGE

(a) *General*

The discharge measurement work that had been commenced in June, 1925 in the Middle Yangtse at Chenglingki, Szepakow, Chihkiang and Sungtse was discontinued in May, 1926, one complete year having been thus covered. Similar work, however, was taken up the early part of the year at many other selected stations, located mostly on tributary streams flowing into the Yangtse and the Siang.

These new discharge measurement stations with their location and their periods of measurements are given below.

DISCHARGE MEASUREMENT STATIONS

Station	*River*	*Location*	*Period of Measurement 1926*
Yukwanshan	Kinshui	7 kms. above Kinkow	Feb. - Dec.
Luchikow	Lushui	Mouth of River	" "
Taokow	Taokowchi	" " "	" "
Tiaohsien	Hwayung	" " "	June - Sept.
Owchikow	Owchihho	" " "	" "
	Ansiangho	" " "	July - Sept.
Taipingkow	Taiping	" " "	June - Dec.
Siangyin	Siang	Siangyin	Feb. - July
Haohokow	"	Junction with branch	" "
Changteh	Yuan	Changteh	June - Dec.
Yiyang	Tze	Yiyang	June & July
Lintsukow	Siang	Mouth of River	March - July

The discontinuance of discharge measurements before the end of 1926 at those stations as indicated above was due to interruptions caused by local military operations. Measurements at those stations that have been taken up to the end of this year will be continued, it is expected, in the following year. At all these stations, the filament velocities at each division of the river cross section were obtained with the current meter at each tenth of the depth from the surface to the bottom of the river.

(b) *Cross Sections at Gaging Stations*

The location of the new discharge measurement stations as well as that of

level of the Yangtse at such prominent stations as Hankow, Chenglingki, Shasi, and Ichang as obtained from the Maritime Customs are plotted on both of these daily progress sheets.

(d) *Elevation of Gages*

The precise level line from the sea at Woosung to Ichang was completed in the spring of 1926, therefore the elevations above Woosung Horizontal Zero of all Y. R. C. and Customs gages on the Middle Yangtse as well as those on the Lower Yangtse are now determined. The program of the Survey Department embraces the establishment of a precise level line from the Yangtse at Chenglingki to run along the banks of the Siang River upstreamward, but owing to the unprecedented floods that arose and the political disturbances that broke out in Hunan and elsewhere only a short section, from Chenglingki to Laishihshan, was completed.

Gages with their elevations which have been determined during 1926 by the precise level are listed in the following table. They supplement those that have already been given in the previous annual report. Those at Hankow and Chenglingki are repeated here for the purpose of comparison.

ELEVATION OF THE ZEROS OF GAGES
In meters above W. H. Z.

Gage at	*Location*	*Elevation*
Hankow *	Yangtse River	11.940
Kinkow	Mouth of Kinshui	14.305
Yukwanshan	Kinshui	15.190
Faszechow	"	20.556
Lungfengshan	Luhu	20.234
Miaochui	Futaohu	20.337
Luchikow	Mouth of Lushui	15.020
Chenglingki *	Mouth of Siang River	17.638
Laishihshan *	Siang River	20.414
Taokow	Taokowchi	19.284

* Customs gage

(e) *Rise and Fall Diagrams*

From data obtained from the records of the Chinese Maritime Customs, the Survey Department has been enabled to draw up a series of diagrams showing the daily rise and fall of the Siang River and other rivers draining the basin of Tungting Lake. These records for the Siang at Changsha have been completed over the period 1908 to 1926, and at Laishihshan, 1925 and 1926, while those for the other streams at Yuankiang, Yiyang, Ansiang, Tsingshih and Changteh, all being new gaging stations, cover a little over two years only. See Plates 5 to 17.

LOCATION OF NEW GAGES

GAGE	*RIVER*	*LOCATION*
Taokow	Taokowchi	Mouth of river
Hwangkaitsui	Taokowchi	Lake
Luchikow	Lushui	Mouth of river
Lungkon	,,	Lake
Tiaohsien	Hwayung	Mouth of river
Kinkow	Kinshui	,, ,, ,,
Yukwanshan	,,	7 kms. above Kinkow
Faszechow	,,	Junction with Kungtsekong
Lungfengshan	Kungtsekong	Luhu
Miaochui	Futaohu	Northern bank of lake
Chihchishan	Yangtse	Above Kinkow
Laishihshan *	Siang	Junction with Milo River
Lulingtan	,,	,, ,, branch
Siangyin *	,,	Siangyin
Haohokow	,,	Junction with branch
Tingtzewan	,,	Near Matanshan
Changsha *	,,	Changsha
Chihukow	Yuan	Junction
Changteh *	,,	Changteh
Yuankiang *	,,	Junction
Yiyang *	Tze	Yiyang
Ansiang *	Ansiang	Ansiang
Tsingshih *	Taiping	Junction with Li River

* Customs gages

(c) *Records*

With the maintenance of the Commission's gages erected in 1925 in the Middle Yangtse up to May, 1926 when they were discontinued, with two exceptions, the Department has now obtained a record of daily readings of simultaneous water levels from these gages for a continuous period of one year. These readings covering the latter part of 1925 as well as those covering the first part of 1926 are plotted on one daily progress sheet similar to those prepared in previous Annual Reports. See Plate No. 3.

The records of a number of the newly established Y. R. C. gages, as described in the section above, cover the greater portion of the year 1926, having been collected continuously from the dates of their erection up to the end of the year. Obviously the records of only those gages that have been linked to the Department's line of precise or ordinary levels could be used in the making of a diagram of simultaneous water levels based on a common datum. See Plate No. 4.

For the sake of facilitating the making of comparisons, the records of water

SECTION II
HYDROLOGICAL DATA

(A) WATER LEVEL GAGES

(a) *General*

The river gages that were established at various places on the Middle Yangtse in the months of June and July of 1925 were maintained during the remainder of that year and up to the middle or end of May of the following year. Thus a period was covered of about a year in which water level readings were regularly taken and recorded at these new stations. This length of time was deemed sufficient to furnish the data required to meet the immediate needs of the Department. Two of these stations, namely those at Tungling and Shahu respectively above and below Farmer Bend, however, have been maintained for special reasons throughout the year 1926.

(b) *Location of New Gages*

A number of new water level gages have been established during the year 1926 on tributary streams of the Middle Yangtse. These gages were erected on various dates as the need for them arose during the progress of the work of the Department. They are located at Kinkow and Yukwanshan on the Kinshui, at Taokow and Hwangkaitsui on the Taokowchi, at Luchikow and Lungkon on the Lushui and at Tiaohsien on the Hwayung.

Because of special investigations being made on the Kinshui and the drainage basin of this river, new gages were placed, in addition to the ones at Kinkow and Yukwanshan, at Faszechow the junction of this river with its branch the Kungtsekong, at Lungfengshan at the head of the Kungtsekong on the Luhu, and at Miaochui on the Futaohu. The readings recorded at these gages furnish important information on the behavior of the waters in the Kinshui drainage system. The new gages at Lulingtan, Haohokow, Tingtzewan and Chihukow, were placed at selected points on the Siang River and its tributaries.

In addition to the gages established by the Survey Department there were several Custom gages the records of which are available to the public and used by the Department. Plates 1 and 2 show the location of the Y. R. C. gages and also that of the aforementioned Custom gages. On these plates are also shown the positions of the discharge measurement stations.

Name of Member on Payroll during Year	*Date of Original Appointment*	*Rank Held December 31, 1926 (or on Resignation*
L. G Chao	July 22, 1922	A. S. E., 1st grade
Hsisan C. Liu	Dec. 1, ,,	Deputy
Triangulation Party		
K. Y. Li	Aug. 5, 1922	Chief of Party
J. K. Lee	Jan. 31, 1923	A. S. E., 2nd grade
Precise Level Party		
C. C. Shen	Aug. 12, 1922	A. S. E., 1st grade, In Charge of Party
C. C. Chang	Sept. 18, 1923	Cadet, 1st grade
Chwan Chun	Feb. 27, ,,	,,
Topography Party		
S. F. Wan	Aug. 1, 1922	Chief of Party
Y. F. Wang	Nov. 1, 1923	S. E., 1st grade
C. H. Wang	Sept. 1, ,,	A. S. E., 1st grade
K. F. Wang	Aug. 1, 1922	A. S. E., 2nd grade
F. C. Bee	Nov. 8, 1923	Cadet, 1st grade
T. Y. Huang	Dec. 28, 1924	,,
Reconnaissance Party		
N. K. Woo	Nov. 8, 1922	S. E., 1st grade, In Charge of Party
J. L. Wang	Dec. 11, ,,	A. S. E., 2nd grade
C. M. Ku	,, 15, ,,	Cadet, 1st grade
F. Y. Liu	March 24, 1924	,,
W. S. Yang	Aug. 5, 1922	Deputy
Marine Officer		
B. Akesson	April 24, 1923	Marine Engineer

SECTION I
ORGANIZATION

LIST OF PERSONNEL

The following tabulation presents a list of the men of the Survey Department showing date of appointment and rank held December 31, 1926 (or on date of resignation.

STAFF

Name of Member on Payroll during Year	*Date of Original Appointment*	*Rank Held December 31, 1926 (or on Resignation)*
G. G. Stroebe	July 1, 1922	Chief Survey Engineer
General Office, Shanghai		
Yang Chen Z	July 13, 1922	Asst. in Charge of General Affairs
T. C. Koo	" " "	Asst. Chief Clerk
P. H. Miao	" 25, "	Property Clerk
T. Y. Chow	" 19, "	Buying Clerk
Drawing Office, Shanghai		
Otis S. Lee	March 2, 1923	Asst. to Chief Survey Engineer
Koo Ting	Aug. 1, 1922	A. S. E., 2nd grade
K. P. Cheng	March 29, 1923	"
S. C. Chu	Aug. 7, 1922	"
T. E. Chen	" 19. "	"
P. C. Shen	" 4, "	"
S. S. Chang	July 29, "	"
Y. T. Wu	Feb. 27, 1923	"
C. F. Pan	May 17, "	Cadet, 1st grade
T. D. Chang	Dec. 1, 1922	"
C. Loh	" 11, "	"
S. T. Zee	Feb. 3. 1923	"
C. M. Yu	Aug. 1, 1924	Cadet, 2nd grade
Chen Chi	" 1, "	"
T. K. Scheng	" 16, 1922	Draftsman, 2nd grade
W. D. Ting *	Feb. 1, 1925	"
Hydrometry Party		
S. L. Yang	November 21, 1922	Chief of Party and Chief Deputy
Y. L. Lin	July 13, 1922	S. E., 2nd grade
Tseng Hung	Dec. 26, "	A. S. E., 1st grade

*Resigned June 7, 1926.

this year than in previous ones. In addition to the work commenced during the preceding year such as the survey of the Kinshui Project and the investigation of the various hsiens, the survey of important dikes was also made.

The preparation of statistics, diagrams, charts, etc., for office files and records and the 149 large drawings and small drawings for inclusion in this report has been made in the Department's Shanghai Office. All field computations submitted have been checked as usual in this office. The large lithographed charts of the Poyang Lake district, containing both hydrographic and topographic information thus making them valuable, navigationally, as well as topographically, are also a product of the drafting office.

Through the kindness of the Marine Department of the Customs frequent use has been made of its river water level records supplementing those made by the Survey Department's own observers. In this year as in previous ones the kind assistance rendered by the Roman Catholic Fathers on the observing and reporting of rainfall records at their various stations is again gratefully acknowledged.

REPORT OF THE SURVEY DEPARTMENT

INTRODUCTION

The report hereby submitted represents the results of surveys, investigations, and measurements made during the year 1926. It is a summary of the year's work accomplished by the Department in all its activities, viz., hydrological, topographic, precise leveling, triangulation, flood control investigation, and chart making. In some branches of the work, operations did not commence until nearly the end of the previous year and the results obtained during the short period in that year, not being sufficiently representative, were held over and incorporated with those acquired subsequently, and are now presented in the present year's report.

The progress of the Department was somewhat impeded during the second half of the year by the occurrence of unprecedented floods in July on the Siang and Middle Yangtse and almost immediately thereafter by military operations in Hunan and the Yangtse provinces. As much as possible of the regular work was carried on and whenever it was found not feasible to continue the regular duties the men were transferred elsewhere to do special work. In general, during the first half year, rapid progress was made in all branches, including the completion of the hydrometric measurements on the main river in the Middle Yangtse district and the successful termination of the entire precise level line from the sea at Woosung to Ichang; during the second half year, field operations were restricted and in some cases suspended due to the aforementioned causes.

The hydrological data on the Middle Yangtse published in the previous Annual Report have been supplemented by additional data in the present report. Many of the graphs in the present volume include values obtained during the two years, 1925-6. Hydrometric activities were commenced during the year in the Siang River and Tungting Lake districts and on certain tributaries of the Middle Yangtse. The work at these stations will be continued in the following year until such time as the results are considered sufficient.

More attention has been paid to flood control and prevention problems during

REPORT

OF

THE SURVEY

DEPARTMENT

(LEVELS AND SLOPE)

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b) Siang River or a stream in the Tungting Lake Basin at: Siangyin, Haohokow, Lintsukow, and Changteh

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SECTION V
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SECTION VI
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Besides the above, the tentative design of the Kinshui lock at Yukwanshan that had been made in 1925 was revised, and a special report accompanied by drawings of the alternative design of the lock for the Chihchishan site was prepared. This work involved considerable studies, as the meteorological and hydrological conditions of the Kinshui as affecting stream flow and the variation of water levels of the Yangtse at Kinkow where the Kinshui joins the River had all to be carefully investigated.

The Survey Department also made an extensive study of the losses to property, life and trade in Hupeh, Kiangsi and Anhwei due to the 1926 flood.

In general, notwithstanding the serious floods and local disturbances along the Middle Yangtse, the year was passed with considerable achievement by the Survey Department. This favorable condition was not only made possible by the efforts of the engineers, but was largely due to the support given by the Nationalistic authorities. The Nationalist leaders, soon after their occupation of the Yangtse Provinces, accorded the Committee the fullest support, realizing that the work which the Committee had been doing was beneficial to the people. Mr. T. V. Soong, the Minister of Finance with his office in Hankow at that time, took a special interest in the Committee's work and did all what he could to prevent interruption and interference from any quarter. Such encouragement given by the leaders of the Nationalist Government shows their sympathy with all forms of constructive work and justifies the Committee to expect an even brighter future.

YANG, PAO-LING.
Acting Chairman.

Peking, January 1927.

PREFACE

Since its formation in 1922, the Technical Committee of the Yangtse River Commission found the year 1926 the most trying one. In July there occurred serious floods on the Siang River in Hunan and along the Yangtse River in Hupeh and Kiangsi. Before the floods had subsided, extensive military operations took place in the same region and lasted throughout the rest of the year. Both the floods and the civil war considerably impeded the progress of the Committee's survey work.

But notwithstanding the adverse circumstances, considerable progress was made by the Committee's Survey Department during the first half of the year, as the Chief Survey Engineer stated in his report, "in all branches including the completion of the hydrometric measurements on the main river in the Middle Yangtse district and the successful termination of the entire precise level line from the sea at Woosung to Ichang". With the completion of this precise level line covering a total distance of about 1770 kilometers and the establishment of its numerous related bench-marks, the elevation of any point on the Lower and Middle Yangtse may now be easily ascertained by those who are interested in the flood prevention problems or any other problem of constructive nature requiring levels. Other field activities including the triangulation reconnaissance of the Middle Yangtse, the collection of water samples for purpose of silt determination, the keeping up of water level and rainfall readings, the investigation of flood prevention problems, etc., were all kept up to the best of our ability.

As it was not possible to give all of the field staff sufficient work to do during the second half of the year on account of military operations and local disturbance, the Survey Department made use of those members to attend to indoor work, such as drafting, tracing, designing and compilation. Three large topographic maps of the Poyang Lake, for instance, were completed and published. Several topographic maps were prepared in connection with the studies on flood prevention and control, and the hydrometric, topographic, and other data collected during the year were analyzed, classified, tabulated and compiled.

The

Technical Committee

of

The Yangtse River Commission

Fifth Annual Report.

For The Year 1926.

December 31, 1926.
Peking.

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揚子江水道整理委員會技術報告5

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