

民國二十五年六月二十日

虬江碼頭奠基紀念冊

孔祥熙題



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虬江碼頭奠基紀念冊目錄

民國二十五年六月編印

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上海市長吳鐵城照像

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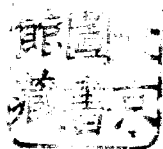
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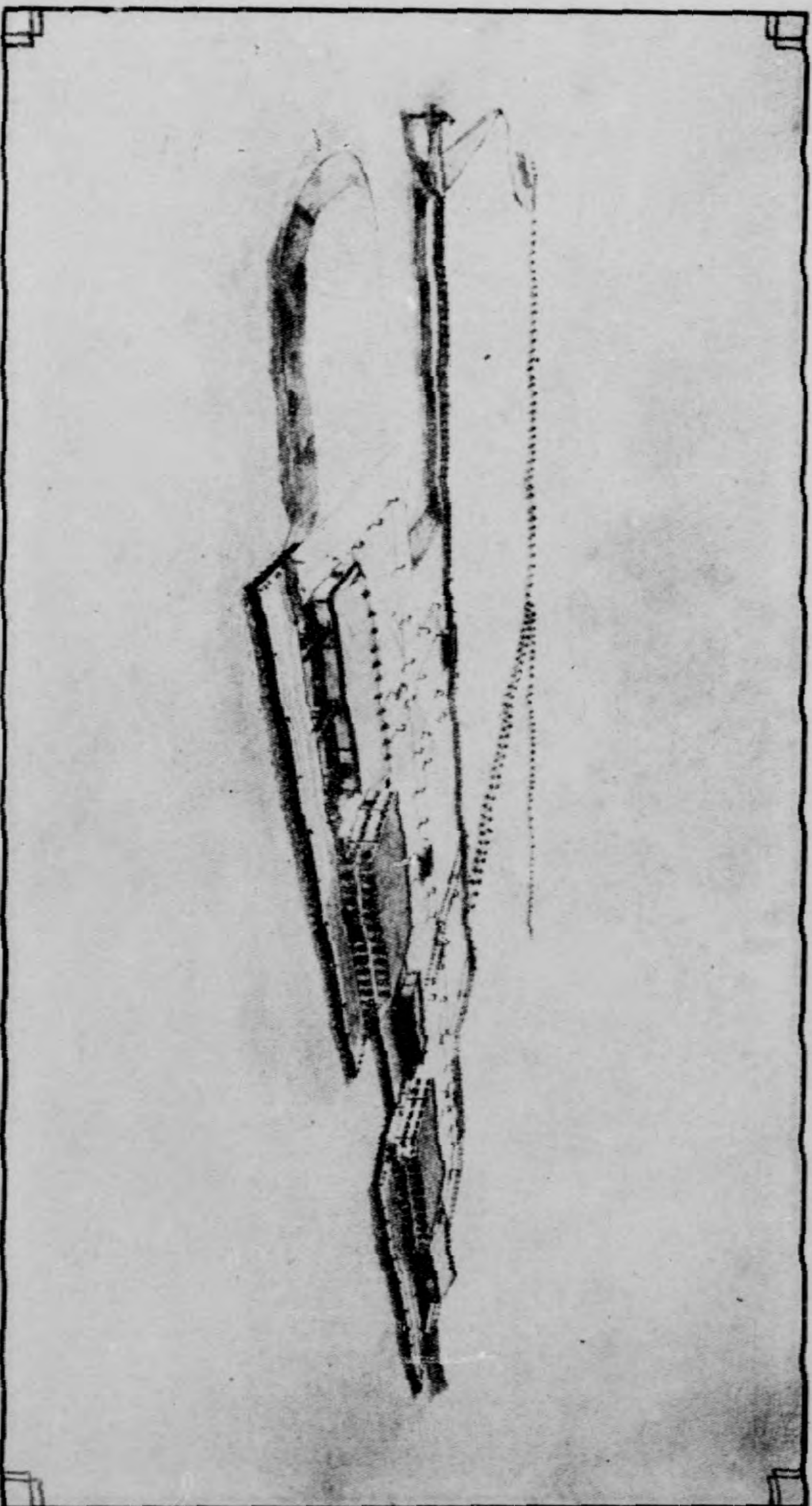
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虬江碼頭透視圖

A PERSPECTIVE VIEW OF THE WHARF.



熙祥孔長部政財

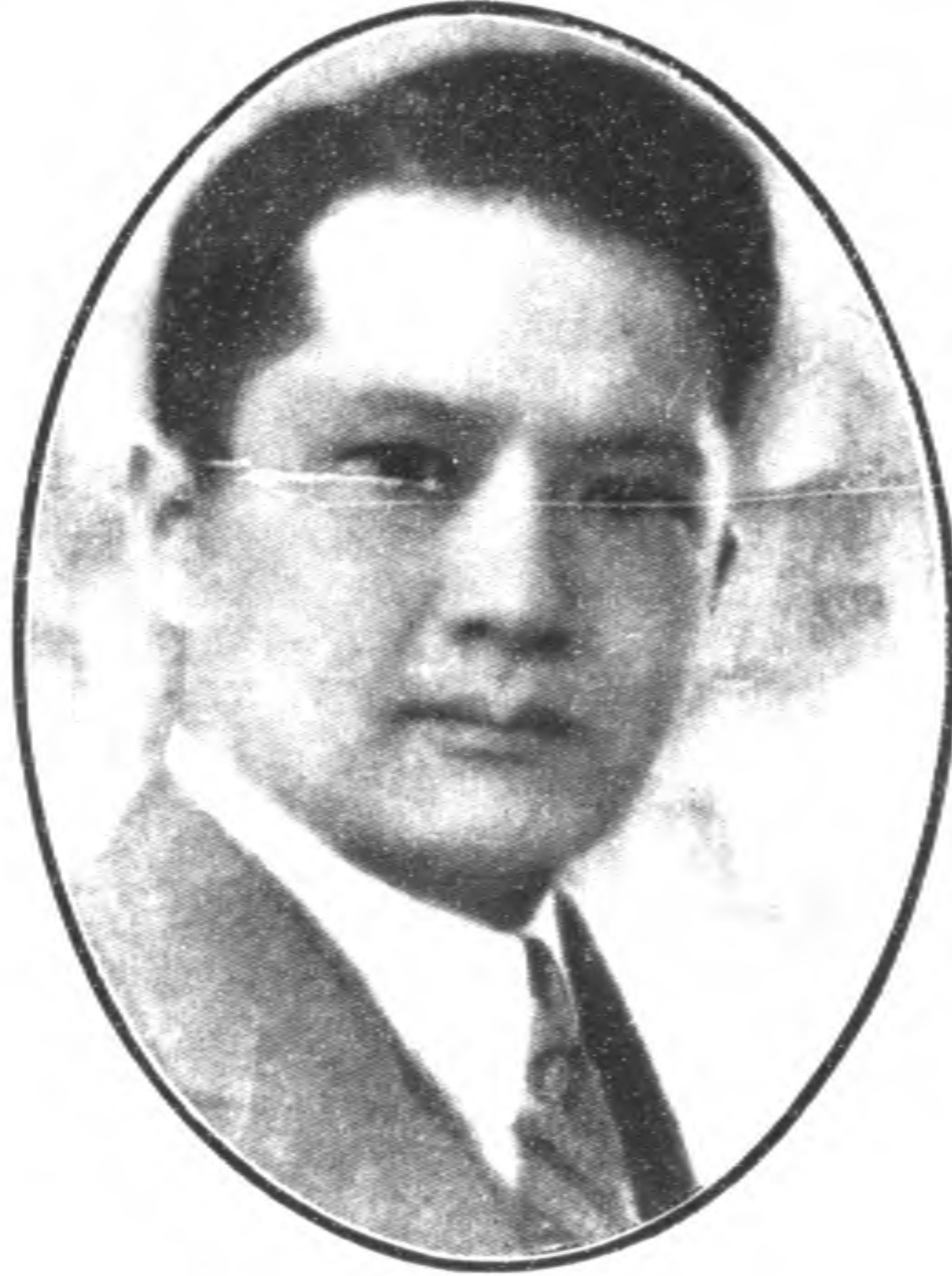
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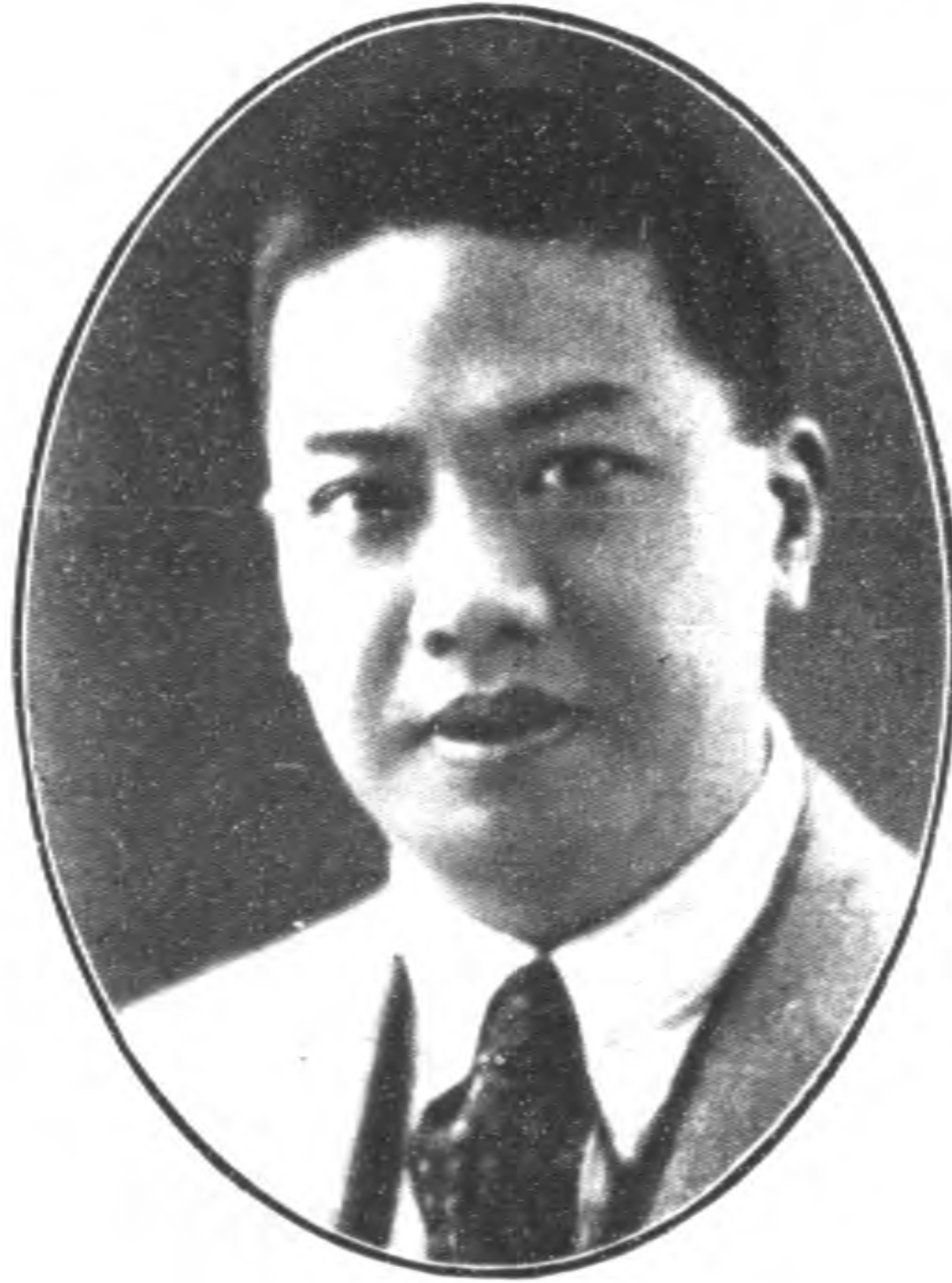
城鐵吳長市海上

MAYOR WU TE-CHEN.

會 員 委 設 建 頭 碼 江 虬
JUKONG WHARF CONSTRUCTION COMMITTEE



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DR. H. CHATLEY. MEMBER.

國立北平圖書館藏

導言

孔祥熙

上海虬江碼頭，將於六月二十日舉行奠基禮，并刊行紀念冊，執事者請爲導言。余惟虬江碼頭之創始，與夫歷年籌備之經過，董其事者，述之詳矣，不待余之贅言；惟當茲奠基伊始，竊願述所感，以誌國人。吾國自通商以還，梯航畢集，各輪船公司於浦江兩岸設碼頭以爲輪舶停泊之所，蓋數十年於茲。而以江狹水淺，起卸貨物甚感不便，虬江碼頭築成，則貨物之運輸存儲至便；則因以發展吾海外商業不難矣，其於吾國國際貿易前途，所關甚鉅。此余所爲慰幸者一也。上海繁榮，悉萃於租界區域，而市區日就衰落。自市政府成立繁榮大上海計劃以來，逐步推行，則工商之發展，其首事焉；碼頭成立，則其有助於工商業之發展，爲益匪淺，所裨於大上海之繁榮者實大。此余所爲慰幸者二也。夫交通建設事業，爲近年來政府最注重之設施，以其與他種事業有密切之關係；年來政府設立中央信託局，實業部創辦各工廠市場；然此數者，均非繫於交通不可；碼頭之設立，

實爲一般工商業所託命；是碼頭成立，所輔助於國營事業者尤大。此余所爲慰辛者三也。而執事者數年籌備之艱苦，各方之贊助，以促進斯舉之成功，尤余所爲欣感者也。今以奠基之日，特述所感如上。邦人君子，幸賜教焉！

建築虬江碼頭與繁榮上海市區之關係

吳鐵城

在昔鐵路輪船未興，凡商業繁盛地方之特徵，爲「檣桅林立」，是知水上運輸交通，關係於城市之發展者由來已久。自有鐵路以來，陸地上始有任重致遠之工具，於是僻壤腹地，亦有以形勢物產等關係，蔚爲巨鎮者，例如德之柏林，既不沿海，亦非巨浸弘流所經，徒以鐵路樞紐之故，遂成世界最大都會之一。惟水道運輸，較之鐵路，論其迅捷，固有遜色；若言經濟，則佔優勢。故雖在輪軌交錯之區，水道運輸，亦不可偏廢。例如柏林每年輸入二千五百萬公墩之貨物中，經由運河而來者，不下一千萬公墩。至於重洋交通所集之濱海地點，即所謂海港所在之處，則水上運輸，尤爲工商業發展之生命線；其重要性，較之聯絡背陸之鐵路運輸，當有過而無不及矣。

上海市地扼吾國最大航行河道之口，與海洋相距甚近；其天然狀況，適於形成深水港，揚子江流域一百九十四萬方公里之地面，因有天然之屏障，幾全部以此

爲貨物吞吐之口岸。此外吾國南部之商業，亦因香港與上海間沿海商埠之背陸及吃水等天然限制，大半均經過上海。又吾國北部，因地勢關係，無一深水港口，可資利用，所有商務亦以上海爲中心。故上海市對於海洋交通，其地位可稱特殊優越。

再就內河交通而言，由上海溯揚子江而上，以達漢口，航道優美，可通行之船舶，冬季爲吃水三公尺左右者，夏季爲吃水九公尺左右者，自漢口以上，夏季可用特種船隻航行一千三百公里，其他較大支河，大半均適於沙船及小輪之行駛，各支河附近通商口岸之進出貨物，咸集中於上海。故上海市對於內河交通，其地位亦稱特殊優越。

由上所述，則上海之由叢爾縣城，發展而成人口三百五十萬之都會，爲吾國最大商埠，爲世界十大商港之一，夫豈偶然？然使當初無黃浦江之疏浚，與碼頭方船等之設備，則水運之利不著，決不能於數十年間，由零落之漁村，一躍而成今

日繁盛之市區。於此，可知一地工商業之振興，除繫乎天然形勢與地利外，更有賴於人力之建設。

上海現有之碼頭設備，固爲前此繁榮之基礎；然以與歐美近代海港比較，猶多遜色。尤以水陸運輸缺乏聯絡，使貨物經由鐵路由內地集中，或向內地分散，難收迅速經濟之效，爲一大缺點。次則深水碼頭深達最低潮位下九公尺（三十英尺）以上者，連浦東浦西並計，其總長度僅約三千一百餘公尺。試就歐洲大海港之一之漢堡港觀之，則供海船停靠之碼頭長度不下三萬五千公尺。由此可知，以現有上海碼頭之長度論，亦不足以應發展之需要。近數十年來上海之碼頭設備，殊無顯著改進；時至今日，苟仍故步自封，則長此以往，誠有如民國十年上海港口技術顧問委員會報告書所云：「設改良工程不行，則吃水較深之輪船，勢必爲外國分發中心地點所吸引，而上海將降爲二等商埠；是不但本埠之利益大受損失，其影響且及於全國焉！」

故欲保持與增進上海之繁榮，關於水上運輸之新建設，即碼頭設備之擴充與改良，實不容或緩。爰有開闢吳淞商港之規劃。顧茲事體大，非短期間內所能實現，乃由中央銀行投資，興辦虬江碼頭之建築；將來落成後，上海深水碼頭之長度可增加一千四百餘公尺，即就第一期工程而論，亦可增加八百八十公尺，對於道路鐵路之聯絡，倉庫貨棧等之設備，亦經籌劃週到，其有裨於上海與國內外各處間運輸經濟狀況之改善，自不待言。運輸費之減輕，足以促進工商業之發展，亦可間接增加市區之繁榮；市中心區與虬江碼頭相距伊邇，為最接近之背陸；其發展日上之發展，吾人當可拭目以俟之也！

建築虬江碼頭計劃

宋子良

民國二十三年春，中央銀行爲發展國際貿易，扶助國營事業及促進上海市區之繁榮計，決議興建虬江碼頭倉庫，以利運輸。夫碼頭事業，規模宏大，工程繁曠，非羅致專門人才，共同研討，必難收羣策羣力，衆擎易舉之效。孔部長有見於斯，乃於九月四日，授命陳健庵，葉琢堂，查德利（CHALEN），劉鴻生諸先生及子良組織虬江碼頭設計委員會。二十四年五月，續聘張公權，徐可亭兩先生爲委員。是年八月，復以設計工作完竣，復奉命將設計委員會改組爲建設委員會，委員人選照舊，承各委員之雅意，推子良爲委員會主席。

溯自受命以來，瞬將兩載，責重才輕，時虞隕越，所幸時獲孔部長之指導，各委員之協助，對於碼頭工作，雖無特殊建樹，然尙竭其棉薄，努力進行，值茲碼頭建築，粗具規模之際，爰將建築之動機，計劃大綱，以及第一期碼頭工程內容等，摘要略述於后：

(一) 建築碼頭之動機

上海市殷行區虬江口沿黃浦一帶邊岸，早經航業界及國聯調查團等認爲一理想之碼頭區域，適宜於船塢碼頭之建築；蓋其岸綫長而直，江水深且濶，船隻往返停泊，均較黃浦其他流域爲安全便利；尤以接近大上海計劃中之商業及工業中心，將來對於國際貿易之發展，進出口貨物之輾轉運輸，具有莫大關係。船隻停泊於此，進出口時經過吳淞口外之神灘，毋需等候潮汛之漲落，即可自由航駛。查黃浦流域之沿租界者，以江面狹窄，水量低淺，各處大小船隻麇集其中，擁擠殊甚。且郵船航綫過狹，行駛其中，尤爲不便，偶一不慎，易遭不測。若虬江口設有碼頭可以停泊，則此種具有危險性及耗費時間性之航程，即可避免，既便貨物運輸，又可節省費用。此以天然形勢之優越而適合於碼頭之建築也。

尤碼頭事業，影響市面之繁榮至鉅，舉凡交通，運輸，金融，保險等，工業

，咸可賴以勃興。碼頭一旦成立，市中心區之繁榮，指日可待。職是之故，遂毅然興建此碼頭。

(二) 建築碼頭之計劃大綱

上述之土地坐落，即黃浦西岸上字第九十號虬江口以北灘地約八百餘畝，及周一三兩圖內土地約三百餘畝，經先後購買，並填高至吳淞口水準零點以上十九呎半後，有岸纜長約三千餘呎，濶約一千餘呎，均可作建築碼頭堆棧等之用。如此廣大面積，須以預測將來營業數額為標準，及不損及投資之利益為原則，至籌劃進行之系統，則以選擇其中重要地段，逐期建設，庶符合經濟之原理，而達投資之意旨。

碼頭全部計劃，共分三期。第一期先行建築碼頭兩座，每座長五百九十呎，可停泊最大之郵船，例如昌興輪船公司之皇后號等及大來輪船公司之總統號等均可停泊；兩層鋼骨水泥堆棧兩幢，鐵棚平棧兩幢，需要時鋼骨堆棧可隨時增

至四層，鐵棚平棧可以拆除，即以其地建築鋼骨堆棧；及辦公室，職員宿舍等。建築工程費共約需五百萬圓，地點在碼頭區域之南段，約佔全面積三分之一，業經與工建築，約俟本年十月中告竣，即可開始營業。必要時，第二三期工程，尙擬繼續舉辦。

全部計劃完成，有直綫形碼頭岸綫長約三千呎，四層鋼骨堆棧八幢，鐵棚平棧三幢；南端另築駁船港口。離堆棧後約千呎處，即係市區道路網幹道之浦西路，南北通達；自市中心區至碼頭中段邊緣，五權路橫貫其間。埠頭區域北部，又有公共碼頭一座，長約三百五十呎。各堆棧前碼頭甲板上，均裝有運輸貨物之機械設備，如起重機，輕便鐵道等。碼頭區域內部，沿浦西路兩旁，留有餘地，以供建設與碼頭有關之旅行社，輪船公司，轉運公司，汽車公司，旅館等代辦處之用。

上海不僅爲遠東最大商埠，亦爲世界十大商埠之一，其供給貨物之來源，較

亞洲任何商埠爲大，水路則扼長江之咽喉，陸路則鐵道橫貫，可與國內各大幹線聯絡，凡進口貨物，皆須由上海分配於長江流域，如南京浦口蕪湖安慶九江而達漢口，再由長江流域，分運內地，而內地及長江各埠之貨物，亦須集中於上海運輸出口。故上海爲長江各省進出口貨物分配之總樞紐。緣是虬江碼頭計劃於堆棧前後敷設鐵道接通淞滬線，則與上海通車之各路如京浙平津粵漢均可聯運，凡自外洋抵滬之貨物，可於船到時，卽刻卸裝車分運內地，而內地出口貨物，亦可由火車裝至虬江碼頭，卸於船上，直運外洋。無論進出口貨物，均無須落棧，不僅省時，抑且節費。此項鐵道設於堆棧後部者二條，碼頭前部者一條，由五權路口合併爲一沿市中心區北部黃浦江接至淞滬綫，長約九公里。其建築費，據兩路管理局估算約需國幣七十五萬圓。此項建築費如何籌畫，如何擔負，各項工程，如何設計，現正與該局商酌辦理。日後築成，則可收水陸聯運之效。再碼頭附近空地，面積有數千畝，在大上海計劃中，擬闢爲飛機場

，同時並於江面規定一處爲水上飛機停泊之所。日後果爾成爲事實，則碼頭貨物之運輸，不僅水陸聯絡，更進而收水陸空三者聯運之效。是誠虬江碼頭唯一之特點，不僅遠東各碼頭所不及，抑且成爲世界最優良碼頭之一也。

關於輪船之給水設備，碼頭與堆棧之消防工作，以及治安清潔等問題，本埠現有各碼頭設備均欠完善，尤以對於旅客及接送人等之便利，更未注意。虬江碼頭則不然，處處顧慮周詳，設備完善，旅客往返與貨物運輸路經，分別隔開，兩不相擾。有接待室，以供旅客及接送人等之休息。其中並設有商店，兼售飲食；及我國著名出品，以便旅客之購買。外如瞭望台，海關行李與護照查驗處，停車間，警局，及問訊處等等，無不應有盡有。總之旅客之住留或往返，莫不予以十分便利。

(三) 第一期計劃工程內容。

適當虬江口沿黃浦以北，長約一千五百餘呎，本築一直綫形之大碼頭一座；

因中段暫設駁船港口長二百二十呎，故岸綫向內凹進，遂將碼頭形成兩座。沿駁船港口，即兩碼頭之中，爲二層辦公室一幢，上層碼頭辦公處，下層海關查驗所及旅客接待室。辦公室南北兩旁，各有二層鋼骨堆棧一幢。此外南北兩端，爲二幢鉄棚平棧。向西後部，爲平面堆貨曠場，四周圍以道路。住宅宿舍，設於全部區域之西南角。茲將設計之各項工程，詳述於下：

(甲) 碼頭。

碼頭分兩座，每座長五百九十呎，下部填打木樁，上部用鋼骨水泥製造，木樁打於平均水平綫之下，不致易於腐爛。碼頭甲板濶五十呎，置有一切停泊設備，下有距離五十呎濶之停泊樁，並有橫木樁，以供駁船之停泊。甲板上有旋轉起重機等，下面另造低層甲板，以便潮水低落時，小船及駁船仍得照常工作。

(乙) 堆棧。

(1) 鋼骨堆棧。

鋼骨堆棧兩幢，係固定性之建築，下部打以一百呎及九十呎長之木椿，上部用鋼骨水泥製造，基礎備為四層建築。惟目前祇建兩層，其餘兩層擬俟將來營業擴充時，再行添造。如此，不特節省開辦費用，且于加高建築時，亦不致重打基礎，而得原有二層堆棧之用。每幢堆棧長二百二十呎，寬一百三十呎，上層為貨物長期寄存，而下層則為貨物短期寄存之用。

(2) 鐵棚平棧。

鐵棚平棧兩幢，係臨時性之建築，為貨物短期寄存之所。每幢長二百二十呎，闊八十呎，有橋樑三架，直通碼頭甲板。如遇建築固定之鋼骨堆棧時，可將鐵棚平棧拆除，移裝於後部應用，其地位即為建築鋼骨堆棧，因目前尚未確知營業範圍，取其價廉而易於移動，拆除另裝，亦無過大之損失。倘遇五六百呎長之郵船停於碼頭時，碼頭甲板上旋轉起重機，可將船

上之前驗貨物，吊至鉄棚前；後驗貨物，吊至鋼骨堆棧之任何一層收貨平臺上，然後再將貨物分別以長短期寄存性質，各爲儲藏，不獨手續敏捷，亦且經濟運費。

(3) 堆棧容積及內外運貨設備。

全部堆棧現有容積，約一萬五千噸。堆棧外碼頭甲板上，置有軌起重機，得將貨物由船艙中，直接吊至鋼骨堆棧之任何一層，無須經人工搬運。堆棧前檢驗貨物處，有複式直綫起重機，得將堆棧下層之貨物，直接吊至上層。所有起重機計有起重運貨車四輛，斜滾車二輛一噸及六噸活動升降機汽車各一輛，滾貨滑車一百五十隻，必要時，添置二噸及十噸半旋轉起重機各數架。堆棧內後部，裝有電梯。故堆棧內部，可以維持單程交通。

(丙) 辦公室。

辦公室位於堆棧之中間，高兩層，長二百二十呎，鋼骨水泥磚瓦建造，上

層爲碼頭辦公室，下層依照海關新章規定，撥爲海關查驗所及旅客接待室。建於沿邊岸之碼頭中心，以其扼碼頭交通行政管理之重心，營業上似較便利也。

(丁)職員住宅宿舍。

職員住宅宿舍，建於碼頭區域之西南端與碼頭堆棧等距離並不遙遠。工程包括碼頭經理住宅一幢，碼頭監工住宅兩幢，海關查驗員住宅兩幢，職員宿舍一座，可容四十人，及兩開間二層房屋六幢，一開間二層房屋十二幢。

(戊)堆貨曠場及道路。

堆棧等之後部，闢爲堆貨曠場，約有面積二十五萬七千四百平方呎，分成長方形地九方，每方四週圍有道路，暫供笨重而不受氣候關係之貨物堆積之用，將來備作建築堆棧之基地，道路係以堅實之煤屑鋪築。

(己)交通路綫。

市區公共道路之系統中，規定有兩大幹綫。一係南北綫形，爲浦西路，自楊樹浦起，沿黃浦西岸，經碼頭後部約離一千呎處，即在碼頭綫與軍工路中間南北平行，至吳淞止。一係東西綫形，爲五權路，自第一期碼頭使用地之北端邊岸起，橫貫軍工路，直達市區中心。其他與五權路東西平行者：有翔殷路，海泰路，及海塘路。各公共道路，除五權路市中心區至軍工路之一段，早經築通，及軍工路至碼頭區域現正建築外；其餘尙未建設，而浦西路碼頭區域之一段；在第一期碼頭工程完成時，即擬興造，各路綫之路面，均計劃以柏油築成，面積寬濶。其中以五權路及浦西路爲尤甚。

碼頭後部至浦西路之地位，第一期工程內，經已設有煤屑路網，即上述之堆貨曠場邊道路，其中較大之一條，直接北部大門，與五權路貫通。故五權路爲碼頭陸上交通之要道。而該路之建築，可與第一期碼頭工程同時完工。

碼頭開始營業時，碼頭區域交通路綫有三，（一）自五權路折入軍工路，以

達楊樹浦路；(二)自五權路經市中心區轉入其美路，以達狄思威路；(三)自五權路經市中心區轉入江灣路，以達北四川路。該三路綫，汽車行駛時間，均不滿二十分鐘，可稱極爲便利。

以上所述，均係建築碼頭之計劃概要。全部工程秋間可以告竣。碼頭唯一之特點，即爲碼頭擬敷設鐵道接通淞滬綫，及碼頭附近空地可以建築飛機場，設日後均成事實，則水陸空聯運兼而有之。旅客之乘載，貨物及郵件等之運輸，省時節費，國際貿易，因是增進，國計民生：兩有裨益。是則虬江碼頭日後不僅可執遠東各碼頭之牛耳，即進而與世界各大碼頭相頡頏，亦無遜色，此吾人所可預期者。

抑尤有進者，黃浦江上下遊之一切航運設備，對於我國工商業之發展，具有深切關係，必須由國人自爲經營，縝密管理，庶可日新月異，力謀發揚；虬江碼頭之興建實其嚆矢也。

虬江碼頭在我國國際貿易上之地位 郭秉文

碼頭事業與國際貿易，關係至為密切，蓋碼頭設備優良，則貨物起卸便利，不僅可以節省時間，亦可減低費用，因之大宗貿易乃易於招致，現在世界各商業發達國家，均莫不在各商埠中建設完備之碼頭，以便利出入口貨物之裝卸。

上海為我國貿易中心，全國出入口貿易百分之五〇以上，均集中於上海，國內土貨轉口貿易百分之四〇左右，亦為上海所獨占，由此可見上海實為我國國內外貿易之最大埠頭，貿易既稱繁盛，碼頭事業亦頗為發達，據上海港口大全（民國二十三年）所載，黃浦江浦東浦西兩岸灘地共計二五三·四七五英尺，其中用作普通貨碼頭者計三八·七七〇英尺，作特別貨碼頭者計二七·四四〇英尺，作船廠者計一三·〇二五英尺，作道路及公共或海關埠頭者計一九·二五五英尺，作工業用灘岸者計二七·四八〇英尺，作河浜者計五·五三五英尺，其餘一一·九七〇英尺，則為未開闢之灘地，主要碼頭及船廠共約一百處以上。但上海碼頭

雖較我國其他各埠爲發達，然性質未臻健全，設備亦未完備，應付目前需要，不免捉襟見肘，更難言乎促進將來貿易之發展，就性質方面而言，現在上海碼頭之最大缺點，一爲國人自營之碼頭過少，碼頭事業幾完全操於外人之手，據調查浦東浦西兩岸碼頭（包括船廠在內）共約九十二處，其中屬於我國政府者計一五處，屬於我國商人私有者計一九處，兩共三十四處，約占上海碼頭總數三分之一強，其餘三分之二，則爲英日美法各國所有，且我國所經營碼頭，除招商局及三北公司所經營者外，其餘則多爲設備簡陋之小碼頭，或僅裝卸煤炭之用，規模遠不若外人所經營者之完備，國人自營碼頭既不若外商經營者勢力之雄厚，則其結果，貨物之裝卸自不免受外人之操縱，二爲公營碼頭過少，大部份均係私營，上海九十二處碼頭之中，屬我國政府所經營者（包括招商局經營之碼頭鐵路碼頭市政府碼頭等）亦僅十五處，屬公共租界工部局所有者，不過二處，合計爲十七處，僅占碼頭總額百分之一八，由此可知上海碼頭，大部份均爲私人所有，此種私營碼頭

過多，不僅起卸費用及手續難收劃一之功，且費用亦常高昂直接影響於商品之運輸成本，間接即影響於貿易之發展。

附黃浦江東西兩岸重要碼頭國籍分類表

所屬者	處數	百分率
中國政府	一五	一六·三
中國（私有）	一九	二〇·六
工部局	二	二·二
英國	二八	三〇·四
美國	九	九·八
日本	一四	一五·三
法國	五	五·四
共計	九二	一〇〇·〇

此江碼頭在我國國際貿易上之地位

其次就設備方面而言，上海各碼頭實未能充分盡便利貨物裝卸之功用，上海現有之碼頭，尙不能容頭等外洋船隻之停靠，據上海港口大全所載，上海碼頭足供二十八尺吃水之船停靠者長約一萬英尺，供三十尺吃水之船停靠者，更不過長六千英尺，但太平洋之商業，將來必資吃水較深之船舶爲之載運，大型輪船吃水之深當達三十三英尺，是則上海碼頭之不足應付大型輪船停卸之需要，實彰彰明甚，至於碼頭上各種設備，更多簡陋，考碼頭設備之最重要者，厥爲起重機，輕便鐵道，駁船及貨棧等，上海各碼頭中，其敷設有輕便鐵道者，可謂絕無，起重機等，機械，設備亦殊感缺陋，其他如駁船貨棧等設備，亦未臻完美，要之我人如欲發展上海及我國之對外貿易，則碼頭實有改進之必要，此無可諱言者也。

去年五月動工之虬江碼頭，在我國商埠史上實放一異彩，該碼頭將於本年工竣，其性質，設備，管理，及位置等，均甚爲完美，不愧爲我國最大之碼頭，將來對於上海本埠之繁榮與我國國際貿易之發展，均具有莫大之功用，自對外貿易方

面觀察，虬江碼頭之特色約有六端：

一 虬江碼頭爲我國國營之最大碼頭 考虬江碼頭爲中央銀行所經營，故虬江碼頭不僅爲我國自營之碼頭，且爲我國國營之碼頭，碼頭既屬國營，則其目的，純在促進商埠及貿易之繁榮，并非爲本身而謀利，因之不僅其費用可較其他碼頭爲低廉，且可供給各種新式之碼頭設備，以便利商貨之裝卸，凡私人碼頭之不能舉辦者，虬江碼頭均可倡導爲之。

二 虬江碼頭爲上海浦面闊，水量深之大碼頭。上海各碼頭因水道關係，鉅大輪船進出多須等待潮水，虬江碼頭位於虬江口，岸線平直，浦面最闊，水量最深，任何巨輪進出，不須等待潮水，并可免除各種危險，安然停船，時間及費用，均可以節省，因之效率可以提高。

三 虬江碼頭爲地位最優良之碼頭 虬江碼頭位在上海市殷行區之虬江口，面臨黃浦，西連市中心區，接近上海計畫中之工商業區，將來市中心日益發達，

虬江碼頭在我國國際貿易上之地位

大上海計畫逐步完成，則該碼頭將成爲市中心區之出納口，殆無疑義，考碼頭建設之主要原則，卽不僅其地位須能應付目前之需要，更須能適應將來之發展，虬江碼頭殆二者兼而有之，故一九三二年國聯工程專家考察上海商港時，亦認爲虬江口與新市區密近，爲建造郵船及其他商輪碼頭之理想地位。

四

虬江碼頭爲我國設備最完備之碼頭，虬江碼頭目前計有鋼骨水泥碼頭二座，長度各爲五百九十公尺，可停船世界來瀕之最大巨輪，兩碼頭之間，則建有駁船港，大小駁船，均泊於此，碼頭上建有堆棧二座，及鐵棚平棧二座，共可容納貨物一萬五千噸，兩棧之中，再建有各種辦公處休息室等，上海碼頭之備有辦公處者，尙以虬江碼頭爲嚆矢，堆棧之外，則裝有特大起重機若干架，船中笨重貨物，可由該機吊至堆棧之任何一層，堆棧中之貨物，亦可吊至船上貨艙，無須工人搬運，裝卸至爲迅速，此項起重機，在本埠尙屬創舉，此外於堆棧前後均敷設輕便鐵道，船中卸下之貨物，卽可由此項輕便鐵道

直接輸送至運貨車，然後轉運至各內地，此項設備，亦為上海前所未有。

五

虬江碼頭運輸徑路繁多，交通便利。碼頭之能否繁榮，大部視腹地之是否豐富深廣以為定，而碼頭背後之腹地，其範圍大小，又恆視連貫此腹地以通達碼頭之運輸經路之多寡以為斷，運輸經路愈多者，則運輸必愈敏捷，費用亦愈低廉，虬江碼頭位於市中心區之前，不僅與市中心區最為密邇，即與特區交通，亦極端便利，由特區至碼頭，不須二十分鐘，此外該碼頭更擬在堆棧後部敷設鐵路三條，與滬滬路接軌，與京浙贛平津隴海各路，均可實行聯運，貨物無須堆棧，即可聯運各地，在水運方面，亦可由碼頭直接卸裝航行江海各輪駛赴各埠，無論水道陸路均極為便捷，於時間及費用方面，均可大為節省，將來該碼頭之成為我國貨物裝卸最稱便利之一碼頭，固可計日而待也。

六

虬江碼頭為最能適應將來發展之碼頭。現在為世界經濟時代，商務發展，一

日千里，上海既為太平洋一商業中心，則其將來發展，自未可限量，因之碼頭設備，亦宜預備將來隨時應需擴充之餘地，然後始能維持永久之繁榮。虬江碼頭面積共有一千一百餘畝，現在動用地畝尚不過三分之一強，餘地甚多，將來發展，自無問題，在碼頭建設方面，目前碼頭二座共計為一千一百八十公尺，可停船五百公尺以上巨輪兩艘，今後第二步預定步驟，即將碼頭展長至三千公尺，同時可以容納世界五百公尺以上之巨輪六艘停泊，堆棧現有二所，將來擬建築至八座，鐵棚平棧亦擬加築至三座，此外并擬建築旅行社輪船公司轉運公司及旅館等等，以期充分供給商運以各種利便。

以上所舉虬江碼頭特色六端，在在均與我國國際貿易之繁榮，息息相關，將來該碼頭完成，我國商運必日趨便捷，行見上海及我國對外貿易，將因虬江碼頭之完成而得一新的助力，是則吾人於虬江碼頭舉行奠基典禮之時，可斷言也。

"Those responsible for the construction of this fine wharf and for the up-to-date equipment planned for the handling of shipping at this port are to be complimented. There can be no doubt that there is need for modern wharfage facilities and I take this opportunity of wishing you every success."

--by O. G. Steen, Vice-President,
Dollar Steamship Lines.

"What an Aerodrome means for Aircraft, means a Wharf for Ocean-Vessels. Shanghai can boast already of a few modern Aerodromes, but not yet of a few modern Wharves. The Travelling Public, Cargo Receivers as well as Steamship Owners have felt this lack of modern Wharf Facilities very often in the past. It is, therefore, admirable that in spite of all handicaps which China has to face to-day, enterprising spirit is not lagging behind.

"The "Jukong Wharf", situated below Point Island Canal, cannot be called a Rival to all the other Wharves in Shanghai, since she will be Unique in planning, outlay, facilities and perspective. She is built especially for the future and its needs.

"We wish this new Ocean Terminal good luck."

--by Melchers & Co.

facility, making for easier operation of vessels calling at Shanghai."

--by K. M. Fetterly, Agent
Canadian Pacific Railway Co.

"The necessity for new wharves in the Shanghai Harbour (Shanghai side) is greatly felt by shipping companies, business firms and passengers. The berthing of a steamer on the opposite side of Shanghai incurs large expense to shipping firms and to shippers who must transfer their cargo from there to Shanghai; and more than anything else such practice involves tremendous delays and inconvenience to passengers with their luggage.

"With the ever growing importance of the port of Shanghai and its very large movement both of freight and passengers steamers, the building of the new wharf at Jukong is a very providential step which is bound to receive the support of the whole public."

--by Cav. C. Polesello, Agent General,
Lloyd Triestino.

"During the last few years vessels of greater tonnage, than in the past, have been entering this great port of Shanghai. In future we may expect vessels of even greater tonnage arriving and departing.

"If the present congestion in this harbour increases in a like manner, it is possible that, in the future, Owners will appreciate a wharf nearer Woosung and below this congestion. We are therefore pleased to learn that the Central Trust of China are looking ahead and building a modern wharf at Jukong."

--by Mackinnon, Mackenzie & Co.

IMPRESSIONS AND COMMENTS

"It is, in my opinion, needless to emphasize how much the enterprising spirit and courage of the promoters of this project,--specially considering the present period of general depression, is to be admired.

"I have no doubt that there cannot be any difference of opinion in this regard, neither as to the material asset the Jukong Wharf will form to the port equipment of Shanghai.

"Specially also the ample provisions which have been made for extension of the wharf as well as of the godown-plant prove beyond a doubt the foresight and intensive desire to further not only the trade possibilities of Shanghai but also to attract shipping by offering efficient shore equipment".

--by J. H. Warning, Manager,
Java-China-Japan Lijn N. V.

"The construction of the new Jukong Wharf is an important extension of harbour facilities in Shanghai, and undoubtedly will result in further growth of trade and shipping activities in this great Metropolis."

--by A. Brondal, Manager,
The East Asiatic Co. Ltd.

"The current trend towards larger vessels will eventually reflect itself in ships calling at Shanghai. It is gratifying to learn that progressive steps are being taken to meet the situation by the construction of a modern wharf in a broad reach of the Whangpoo, near open water, and with easy access to Shanghai. Shipping generally should welcome this additional

be reached long before the available depth is fully utilized. Consequently, behind the wharf proper, there will be space for private storage, packing, light industries (as assembling machinery, possibly motor cars, etc.) shipping business, etc., in short, for undertakings to which close proximity to an ocean terminal as the one under review is an advantage. The consequence to the wharf would naturally be increased traffic.

with the general trend of the development of Shanghai northwards, and the continuous growth of the Civic Center, there can be little doubt that the undertaking now started means putting this area to its natural use. Very early, people connected with shipping in Shanghai realized that the spot was ideally suited for a wharf. Later, an international committee recommended it as the site for a huge port development, including wet docks and wharves, with the initial step of development consisting of a wharf at the identical spot where now the Central Bank of China is building. To a measure, one can say that an old dream is coming true in this construction. And one can further believe its future may be even greater than originally imagined, considering the added possibilities in the location of the Civic Center which has been decided since the biggest ocean terminal in the world was first visualized near the Jukong.

lying immediately behind the wharf site up to the Military Road, which is entirely free from any important buildings, will be built as an aerodrome, while the river front will also be utilized for the same purpose, according to the Civic Center Development Scheme already adopted by City Government Authorities.

With the operation of the siding and the air line behind the site, the wharf will become the center of air, land and water transportation of the country—a step which will set a precedent and mark a new era in the history of overseas shipping facilities in this part of the world. The wharf will form a nucleus through which the various parts of the country may be brought within reach of one another in a way that was never experienced before. Considering the importance of Shanghai in relation to China's domestic and foreign trades, we have no doubt that the wharf will contribute invaluable services to further the welfare of this port as well as of the country at large.

CONCLUDING REMARKS

The future possibilities of developing this wharf are, if not unlimited, in any case, huge. A frontage of several thousand feet is available downwards from the present building site before really shallow water is reached. And the area inwards is practically free from any important buildings as far in as to the Woosung Military Road. This entire area will naturally never be required for the direct working of the wharf, the depth inwards to which godown construction could economically be carried being dependent upon the efficiency of the wharf machinery and consequent frequency of ships' calls, but the limit will probably

CENTER OF AIR, LAND AND WATER TRANSPORTATION

In less than 20 minutes, the wharf site will be accessible by motorcar through 5 main routes, namely: (1) Poo Si Road, from Yangtszepoo Road along the west bank of the Whangpoo behind the wharf to Woosung; (2) Wu Chuen Road, from the Shanghai Civic Center to the wharf; (3) Military Road, from Yangtszepoo Road to Wu Chuen Road; (4) Gee Mai Road, from Dixwell Road to Kuo Hwa and Wu Chuen Roads, (5) Kiangwan Road, from North Szechuen Road to Shiang Yin and Wu Chuen Roads.

Connecting with existing railway lines, three railway tracks immediately behind the warehouses, and one track on the wharf deck will be laid, so as to achieve through traffic service. In view of the fact that this siding will pass through the Woosung Industrial District, it is hoped that the tracks will be laid in the not too distant future, so as to expedite the early development of the district which City Government Authorities have designated as the Industrial Center of Greater Shanghai.

Being approximately 9 kilometers in length, the siding will cost about \$750,000 and will take several months in construction, according to an estimate by the Shanghai-Nanking & Shanghai-Hangchow-Ningpo Railway Administration. Upon the completion of this siding, it is expected that transportation of goods to and from foreign countries on one hand and inland districts of this country on the other will be effected in a shorter time at a lower cost.

To facilitate air transportation, in addition to land and water transportation, a part of the land

front during landing. They will, however, have ample opportunity to watch the arrival and docking of the steamer and the landing of passengers from very advantageous points, as they will be given access to the roofs of 2 two-storeyed godowns right on the wharf front. If they prefer, they may stay on the balcony in the Examination Shed and remain there until the particular passenger they have come to meet is seen, when he is finished with the luggage examination. Any crowding in the entrance hall or around the exit from the Examination Room is therefore not expected. To prevent all possibilities of any such crowding, however, barriers are to be erected at the passenger exit, clearing an open lane for traffic.

The road system within the wharf proper is laid out with a view to maintaining a strict one way traffic. The main entrance is double, one for each direction of traffic, with a gatehouse for watchmen, etc., in the middle.

Near the wharf but outside the compound proper the necessary residences and quarters for the staff will be built. This part of the building program will include residences for the wharf manager, the wharfingers and warehousemen, and for the Customs employees who will be stationed at the wharf, a number of Chinese double and single dwelling houses, and a separate building with quarters for the minor staff.

A perspective sketch of the first step of the development to be found somewhere in this booklet will give a good impression of what construction is involved at the present time. The construction will take about one and half years and is expected to be completed before the end of 1936.

The provision of information, transportation, hire car, hotel, and travel service has been taken care of in a very practical way. An office accessible from both the entrance lobby and the Examination Room will be established to provide whatever passengers' want of the above mentioned services including the exchange of foreign currency. This office will in any case be controlled by the wharf authorities, and administrated either by these authorities or by an approved travel service organization. The result is that passengers, while entirely unpestered and unmolested by enterprising agents, may, whenever they want it, obtain all possible assistance and service of the highest order at very reasonable rates.

If any passenger beforehand has arranged for certain hotels or transportation companies to meet him, nothing will prevent him from availing himself of their services. By applying at the information office, he will immediately be put in touch with the agent of the organization in question. This agent will, however, not be allowed within the building before such application has been made, as his presence there beforehand would simply mean that he would quickly make a nuisance of himself by energetically soliciting for business.

Through the lobby, passengers will reach the main exit, where they can enter their motorcars under a projecting canopy protecting them against rain. Heavy luggage not going to passengers' cars will be carried to lorries outside through a side exit provided for that purpose. Passenger and heavy luggage traffic will therefore as much as possible be kept separated.

On account of Customs' rules and regulations, meeting friends will not be allowed access to the wharf

During, or possibly before, the landing of passengers, their luggage will have been transferred to the Examination Shed, and sorted by the Customs inside the examination counter. The passengers will, therefore, after the least possible delay upon their arrival at the shed, find their luggage ready for examination under their respective name letters.

The Examination Room itself will be given the best possible finish, affording clean and pleasant surroundings for passengers during the unavoidable period of waiting before Customs' formalities are completed. Benches and seats will be distributed around the room for those who prefer to stand back until the worst rush is over, and toilet rooms and public telephones will be provided to meet their needs. Besides 2 search rooms and a lock-up for eventual detained articles, the Customs' facilities include 2 Shroff's Rooms, at either of which passengers may pay their duties. In short, it may be said that the Customs' conveniences are of a nature not to be seen at any other wharf or jetty in Shanghai.

Entering this building from the public side, one will first find a spacious lobby or hall, in which are to be found several shops or stalls where flowers, newspapers, curios, etc., may be obtained. A stairway leads from this hall up to a balcony on a mezzanine floor. At the end of this balcony, a buffet is situated where the waiting public may obtain tea and light refreshments, if the waiting time should prove longer than expected. From this balcony, furthermore, meeting friends may come into closer contact with the passengers, as it opens out to the Examination Room. The height from the floor of this room is not too great to prevent pleasant conversation between meeting friends on the balcony and passengers below.

low when compared with the average Shanghai conditions, the local wharves usually having considerably more storage space.

OFFICE, CUSTOMS EXAMINATION ROOMS, PASSENGERS' WAITING ROOMS, ETC.

Between the two wharves, the office building will be located. this building will be in two storeys to be built in brick and reinforced concrete on wooden foundation piles. The upper floor will contain the administrative office of the wharf, while the ground floor will accommodate the Customs with rooms for examination of import and export cargo, and offices.

Besides the Customs Examination Shed, waiting rooms will also be provided in the same building for the convenience and comfort of passengers as well as meeting friends, housing such service organizations as information office, travel service bureau, transportation, hire car, hotel agents, shops, restaurant, telephone booths, toilet rooms, etc., and offering ample protection against weather in pleasant surroundings. All of these provisions, much to the disappointment and inconvenience of those concerned, have been overlooked by other wharf companies in Shanghai.

Special care has been given to the segregation of passenger and cargo movements, in compliance with rules and regulations of the Chinese Maritime Customs. As a result, passengers will not have to experience all such inconveniences as noise, dust, and smell usually connected with the unloading of ships, while, on the other hand, cargo movement will not be retarded. Orderliness, cleanliness, ease and comfort are to be the main features of the passenger facilities that will be offered by the wharf.

to the different floors, including the ground floors. This again means that any floor may be used for transit space and not only the ground floor, as usually is the case for practical and economical reasons.

At the rear of the godown, for delivery and eventual receiving service in this direction, one cargo lift and one chute will be placed, and in front, as a reserve unit, one lift per two godowns. With the cranes taking care of all incoming cargo from the front, a complete one way traffic may be maintained anywhere in the godown.

Under the present scheme, these godowns will only be built two storeys high, and temporarily roofed at the second floor. The only cranes installed will be of the gantry type.

In addition to the above warehouses, two steel sheds are included in the first part of the development, covering an area of about 220 by 80 feet each. The sheds being a temporary arrangement, steel was selected for their material, as it easily lends itself to dismantling and moving to a different location.

Mechanical devices required at the first stage of the development consist of 8 elevating trunks, 4 stackers, 4 three-ton mobile cranes, 1 ten-ton mobile crane, 150 gravity rollers, etc. At the final stage, the mechanical devices alone will call for a total expenditure of almost one million dollars.

This initial development will give the property a length of 1180 feet wharf, over a frontage of about 1500 feet. The storage space amounts to roughly 15,000 tons, giving about 12.7 tons per foot of wharf, and about 10 tons per foot of frontage.

As will be seen, these latter figures are rather

mooring posts with an average spacing of 50 feet, besides cleats for the berthing of small vessels and lighters. In addition, crane-rails will be placed for the ample crane equipment included in the scheme. At intervals, below the main deck, lower decks will be constructed for the working of small craft and lighters at low water.

The filling of the land will be carried out to 100 feet behind the wharf edge, where a retaining wall partly of reinforced concrete, partly of wood, will run along the whole front. Each wharf is connected to this bunding with three 50 feet wide connecting bridges in reinforced concrete on wooden piles.

WAREHOUSES

The space between these bridges is intended for warehouses, of which two of a permanent character will be constructed now. These permanent warehouses, to be constructed in reinforced concrete on wooden foundation piles will be four storeys high with a stepped back front, and will occupy an area of about 220 by 130 feet. The front part, over a width of 50 feet, must be constructed somewhat on the same principles as the wharf to allow free flow of water underneath, conforming to the requirements of the Whangpoo Conservancy Board.

It needs but a few lines to explain the advantage of the stepped back front of the godown. The cranes, whether of the straightline type or of the gantry type, can pick up cargo from a ship's hold and swing it directly on to the receiving platform of any floor desired, thereby effecting a considerable saving in vertical transport during the transfer of cargo from ship to place of storage. The system, furthermore, will make the working of the wharf more elastic, inasmuch as there is very little preference between transport cost

Upon the completion of the whole project which will be carried out in three stages, there will be an uninterrupted dock frontage of almost 3,000 feet, ample enough to accommodate 5 of the biggest ocean liners calling at this port at the same time, 8 reinforced concrete warehouses of four storeys high, 3 steel-sheds, etc. The construction cost alone will amount to more than \$7,000,000.

THE FIRST STAGE OF THE DEVELOPMENT

TWO WHARF SECTIONS

A plan of the first step of the development reveals the construction of a system of very wide roads, which will amply accommodate lorries and handcarts taking delivery from the shoreside. With a view to gaining easy access for lighters, when ships are berthed at the wharves, space has been left between the wharf sections, and a reserve in the form of a lighter basin has been provided for.

The two wharf sections, each 590 feet long, are to be constructed as composite wharves, i. e. with a reinforced concrete superstructure on wooden piles. The combination of these materials and the way the details are formed are very well suited for the conditions prevailing along the Whangpoo. The piles, being out somewhat below average waterlevel, will be kept sufficiently wet to be considered practically immune to any deterioration, and the durability of reinforced concrete under not too severe conditions is well known. Furthermore, the comparatively open construction will allow a fairly free flow of water under and behind the wharf, minimizing the danger of any excessive silting.

The wharf deck, which is 50 feet wide, is equipped with mooring facilities, consisting of bollards and

present development is taking place.

Considered as a passenger terminal, the distance of the wharf from the Central District is but a minor consideration compared to the advantage of a quicker and easier crossing of the bar at Fairy Flats. With average traffic conditions and normal speed, a motor car will make the distance from the corner of Nanking Road and the Bund in less than 20 minutes, and with the scheduled new and improved roads of the Civic Center development, the time may be considerably shortened.

PROJECT TO BE DEVELOPED BY STAGES

When the detailed lay-out of the area was being planned, certain points, as outlined above, had to be considered. The wharf is built primarily for the accommodation of ocean-going vessels, and facilities for Customs examination of cargo and passengers' luggage would consequently be required. The comfort of passengers and the rapidity of cargo movement are naturally very important considerations. Arrangements have to be made so that the one would not interfere with the other.

Further, as the area at disposal is huge, and it consequently will be developed by stages, each step in the construction has to be made in such a way that the property at any time is conveniently and practically laid out, and still will fit into a final development scheme.

The first step in this development will embody the filling in of about 225 mow of low-lying fields, and the construction of two sections of reinforced concrete wharves, four warehouses, one office building housing the wharf offices, the Customs Examination Rooms, and passengers waiting rooms, several residences, etc.,--operations which altogether will represent a capital investment of between 4 and 5 million dollars.

One of the most important questions in connection with a wharf for ocean-going steamers on the Whangpoo has always been the necessity of providing sufficient depth of water, and being situated on the concave side of a bend, and owing to the scouring effect of the current, the new wharf naturally has a good chance in this respect.

The location of the wharf below the district which is usually thought of when one speaks of the "Port of Shanghai" may to a certain extent be considered a disadvantage. Closer scrutiny, however, will somewhat change this idea. The location, being immediately above a straight, wide reach of the river where plenty of water is available, allows a much freer maneuvering than anywhere else on the Whangpoo, with a consequent greater safety to passing and berthing ships.

Another huge advantage of this particular site is that, whereas it is still in a fairly close proximity to the business and manufacturing centers of Shanghai, even the biggest ships calling at the port and berthing at this wharf are able to cross the bar at Fairy Flats on one tide. The loss of time caused by slow maneuvering and the risks unavoidably connected with a big ship's passage through the congested upper part of the harbor are entirely eliminated.

When thinking of the wharf being situated outside the harbor area proper, one should also bear in mind that the development of Shanghai necessarily must be towards the north. In this direction the Civic Center is rapidly rising, and in this direction are the only possibilities of any further extension of the harbor facilities. The center of gravity of Shanghai as an ocean terminal must be moving northwards, and will at some probably not so distant future be around the district where the

PLANNING AND DEVELOPMENT OF THE JUKONG WHARF

BY

T. L. SOONG

With the definite purpose and determination to facilitate overseas shipping, to assist the development of the Shanghai Civic Center, and to promote foreign trade, the Central Bank of China in the spring of the 23rd year of the Republic of China reached a decision to finance the construction of the Jukong Wharf north of the Jukong below Point Island Canal.

In view of the importance of the enterprise, the Jukong Wharf Planning Committee was organized under instructions of H. E. Dr. H. H. Kung, Minister of Finance and concurrently Governor of the Central Bank of China, comprising the following members: Mr. Chang Kia-ngau, Mr. Jian, H. Chen, Mr. Hsu Kan, Mr. Churtong Yib, Dr. H. Chatley, Dr. O. S. Lieu, and the writer. In August of the following year when the work of planning was completed, the construction of the wharf having been commenced, the Committee was re-organized as the Jukong Wharf Construction Committee comprising the same old members, and the writer was elected Chairman of the new Committee.

Tributes must be paid to Dr. H. H. Kung and other members of the Committee for their untiring efforts in this connection, for without their able direction and supervision, the work could not have been executed in such a satisfactory manner as it has proved to be.

In this article, it is the purpose of the writer to present the origin and the development of the whole project for the construction of the Jukong Wharf.

the International Settlement and the French Concession are in a flourishing state, the Municipality of Greater Shanghai stands out in sharp contrast because of its backwardness. In order to remedy this deplorable situation, therefore, the Authorities of the City Government have taken painstaking efforts to make improvements, the latest of which is the launching of a comprehensive programme, known as the "Greater Shanghai Plan", aiming at industrial and commercial development within the borders of the municipal territory. The Jukong Wharf, being essential to industrial expansion, will undoubtedly help realizing the plan at an early date.

Thirdly, the Jukong Wharf will render assistance to State enterprises. State enterprises, such as the Central Trust of China and the various factories and markets established by the Ministry of Industry, are undertakings to which the Central Government has been directing wholehearted attention in recent years. The development of institutions of such nature, however, depends in a large measure on means of communication. In the new wharf, these institutions will find an answer to their needs, a wharf being closely connected with problems of insurance, transportation, storage, etc.

In closing, I should like to thank all those who have been responsible for, and those who have given assistance to, the construction of the Jukong Wharf, without whose energetic and indefatigable efforts this important task could not have been a success.

FOREWORD

BY

DR. H. H. KUNG

I have been asked to write a few lines on the occasion of the laying of the corner stone of the Jukong Wharf, which is scheduled to take place on June 20th. Inasmuch as a detailed account is already being given by those in charge of this gigantic task, on which years have been spent in preparations, repetition seems superfluous. I shall therefore give a few of my impressions regarding the benefits which will be derived from the realization of the scheme.

Firstly, the Jukong Wharf will provide a new impetus for the development of China's foreign trade. Since the opening of Shanghai as a treaty port, there has been a constant increase of vessels arriving and departing, both in number and tonnage, and, for the purpose of providing anchorage, various steamship companies have followed in the wake of one another in building wharves along both sides of the Whangpoo River. As practically all the wharves have been constructed along the river front of the Central District where the River is not only narrow, but shallow as well, the upper reaches of this port have proved too congested and hazardous for the passing and berthing of deep draft ocean-going steamers. The new Wharf is designed to meet the growing demand for better shipping facilities, thereby contributing much toward the development of our trade with foreign countries.

Secondly, the Jukong Wharf will enhance the prosperity of the City of Greater Shanghai. Whereas

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ON JUNE 20TH, 1936