# THE PASSAGE OF THE FORTH

## A Brief History of Village of North Queensferry, Fife

Compiled by A. T. Blatchley

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# FOREWORD

THIS is the story of one of the oldest villages in Scotland, situated on a peninsula of West Fife, which is very much in the news nowadays owing to the construction of a new Road Bridge. This brief historical account I have called *The Passage of the Forth*. After walking round it twice a day for nearly 30 years I felt there was a need to record some of the interesting events that, in the past, I had given in answers to many visitors who asked questions of me when I wore the uniform of village postman. It may be of interest to note that my predecessor, Robbie Chalmers, was almost a direct link with the days before the Forth Bridge was built as he was there as a boy about 1850. I was one of the artillery men who garrisoned lnchgarvie in 1910, fifty years ago.

It is strange that this recording and brief history should have finally been compiled in Australia, 13,000 miles away in New South Wales, where quite a number of those I knew in the old village are now settled and well established with families growing up who have no knowledge of Scotland and the village where their parents were born, yet keeping up the old Scottish traditions by wearing the kilt and playing the bagpipes in pipe bands and dancing eightsome reels and the Dashing White Sergeant on Hogmanay in summer temperatures ranging from 80 to 90 degrees.

*A. T. Blatchley*

*Gosford, N.S.W.  1960.*

# THE PASSAGE OF THE FORTH

## Queensferry Passage

There is no doubt that this has always been a favourite crossing, being the chief natural route of communication between the Lothians south of the Forth and Fife and the North East Scotland, since here is the first considerable narrowing of the Firth of Forth from the open sea. Between shore and shore distance across is approximately three-quarters of a mile.

Westwards of North Queensferry the Firth expands again until beyond the ports of Bo'ness and Grangemouth, where it narrows down to the width of a moderate size river at Kincardine, 15 miles from Queensferry Passage, and at which point a swing bridge was built and put into operation in October 1936, which was said at the time to be the solution to the passage of the Forth in conjunction with Diesel Electric Ferry Service. At that time the estimated cost of the Forth Road Bridge was £4 million. To-day the estimated cost of the Bridge now under construction is over £16 million.

Previous to 1936 the nearest crossing by road bridge beyond Queensferry Passage was at Stirling, 30 miles up.

## Ancient History of Queensferry Passage

Evidence of the great antiquity of North Queensferry and its Ferry Service can be found in historical and ecclesiastical records.

Hungus, King of Picts, after defeating the Anglo-Saxon invader Athelstane, impaled Athelstane's head on a stake on Inchgarvie Island (now centre cantilever of Forth Bridge rests on it) as a warning to invaders from England. Further evidence of Celtic settlement here was the discovery in 1857 of three burial cists containing human remains, burial urn and cup of Celtic origin, when a mound in the grounds of Craigdhu House was excavated. This house stands on rising ground west of present Ferry Pier and overlooks the Mackintosh Rock, site of the 500 feet steel tower support for the new suspension Road Bridge.

Also in 1857 remains of large canoes were found embedded in lower strata of sands at Port Laing, east of North Queensferry.

Agricola Ceasar's Roman Legions crossed here, marching on to Perth, A.D.83. The Romans called the passage *Freti Trasitus*.

## Royal Travellers

Scottish Kings and Queens, other than Queen Margaret, who used the Passage were James IV., 1505-1507-—it is recorded he made an offering in St. James Chapel; Mary of Guise, young Queen of James V.. used the Passage July 1538 coming from St. Andrews for her official entry to Edinburgh; Mary, Queen of Scots, on at least four occasions, 1563-1565, and on the occasion of her escape from custody in Loch Leven Castle. 2nd May 1568.

Queen Victoria and Prince Albert disembarked at North Queens ferry, September 1842, on their way to Balmoral, Aberdeenshire. Although after the opening of the Forth Railway Bridge, 4th March 1890, the Royal Family now crosses by train on their annual holiday to Balmoral Castle, there have been many occasions when members of the Royal Family, travelling by car, use Queensferry Passage, especially during Edinburgh's annual Festival of Music and Drama. No public indication is made of these occasions, therefore there is no knowledge of the identity of the travellers. The only indication of their importance is the fact that the Royal cars "jump the queue" much to the surprise of a long queue of waiting motorists at such a period.

## Origin of Name Queensferry

The ancient records of the ferry service go back to the 11th century and the reign of Malcolm Canmore and his wife, Queen Margaret. The ferry acquired the name of Queen's Ferry Passagium Regina under a charter of Malcolm 1V. in 1164. When David I. granted the ferry charter to the monks of Dunfermiine he called it Passagium de Inverkeithing, 1124-1152.

Queen Margaret was a Saxon Princess, daughter of Edward, King of England. and grand niece of Edward the Confessor. When England was conquered by William I the Norman, 1066, the heir to the English throne, his mother, Agatha, and his two sisters, Princess Margaret and Princess Catharine, escaped by ship from England. This vessel was driven by tempestuous weather on to the coast of Scotland and. for safety, ran up the Fifth of Forth beyond the ferry passage and the Royal party disembarked on the north side, now known as St. Margaret's Hope.

Malcolm Canmore, hearing of their arrival, visited them in person, invited them to his castle and entertained them hospitably. Four years after, in 1070, Malcolm Canmore and Princess Margaret were married at Dunfermiine. That is the first union of England and Scotland that I know of, but since those days many young couples representing England and Scotland have "plighted their troth" adjacent to Malcolm Canmore's Castle in beautiful Pittencricif Glen. The late Andrew Carnegie, his birthplace is in Dunfermline near the Glen, was barred from the Glen as a boy, it being private property, afterwards bought the whole estate and gifted it to his native town.

Queen Margaret is also said to have established the first colony of ferrymen with their families at North Queensferry. She was so much revered by them that

they cut out in the solid rock of the Binks, the ancient landing, the impression of her footmark. There is now no trace of the carved footprint but we still have at the present day St. Margaret's Stone at Pitreavie, near Dunfermline, where Queen Margaret and her retinue rested on her frequent journeys to Edinburgh. On the topmost peak of Edinburgh Castle Rock there still survives St. Margaret's Chapel and still available for quiet prayer and meditation as in the days of Queen Margaret over seven hundred years ago.

Over the centuries this colony of ferrymen lived and moored their boats on the north side of the passage. Following tradition, the Diesel electric ferry boats also and the majority of the crews live on the north side,

All through the Middle Ages the ferrymen formed a close corporation, a truly communist colony in the original sense of the word.

All moneys derived from fees, "The Ferry Silver," went into community chest and was shared. Quarter to upkeep of boats and landings; remaining three-quarters in proportion to men and boys engaged on passage, old boatmen, widows and orphans of boatmen, and a share for schoolmaster.

No person, unless born beneath the Ferryhills, was ever admitted as a ferryman.

Later, with the development of whinstone quarries, railway bridge building, and quartering of troops in the village, this exclusiveness was broken.

Originally, the ferry service plied between the old pier in the village and Hawes Pier, south side, and before the coming of the railways there were stables and coach-sheds at the pierhead, so there would be lively scenes with the transfer of mails, goods, and passengers for the stage coach to Perth and the North.

Some indication of how busy the pierhead at North Queensferry was in the 18th century is shown in annual traffic returns of that period, noting 40 hearses and funeral coaches, 145 coaches, 465 chaises, 16 curricles (two-wheeled chaise with pair horses), 770 gigs (light two-wheeled vehicle with one horse), 1,580 carriage horses, 4,310 cart horses, 5,860 saddle horses, 31 mules and asses, 1,600 black cattle, 30 calves and hogs, 23,300 sheep, 3,600 lambs, 2,340 dogs, 4,500 barrels of bulk goods (ale or beer perhaps), 77,500 passengers, 3,500 Highland shearers, in addition to mails, military baggage carts, troops, and government stores.

Stage coaches with horses were stationed each side of the passage so it was indeed a lively place in the 1800's, especially with 3,500 Highland shearers and their 2,340 dogs passing through annually.

North Queensferry in those days had no less than 13 inns for the sale of ale, beer, and spirits, with consumption on the premises to quench the thirst of drouthy drovers and Highland shearers, and possibly many a Scotch lamb to the innkeeper would pay for the quenching. Old records show that considerable amounts of ale and beer were brewed in the village. Alexander McRitchie being connected

with this trade as far back as 1697, this family therefore were established in the village over 250 years ago. The descendent of this family, who died during the recent war (1939-45), left McRitchie property in Battery Road to the village but, unfortunately, the village did not retain it even although some of it is still occupied at the present day. Other 18th century property remaining is now general store and newsagent at Pierhead, with upper portion as modernised interior living accommodation.

The Albert Hotel was erected in 1840 by Robert Mitchell on the site of a one-storey Hope Tavern.

Opposite is one of the oldest houscs in the village, erected 1693 (subsequently reroofed and frontage refaced), but original fabric of gables and walls intact. Initials of original owner, THOMAS PEASTIE, and wife, BESSIE CREACH, appear on pediment on front wall.

The old village hail, stables for coach horses, and other premises in the vicinity have been demolished; site of one of original Pierhead Inns is now car park, and site of stables is now new homes for old folks. The ancient navigation light-house is still in existence, and the Tower House on pierhead was headquarters of ferry service under Superintendent Capt. James Scott, R.N., who reorganised the service in 1809. It is still occupied as dwelling-house by Capt. Caleb Stone of Diesel Electric Ferry Service.

## Chapel of St. James

The historic old chapel of St. James, only the gable end of which survives, as part of the wall surrounding ancient burial ground, is in Chapel Place surrounded by some of the older houses.

Under the patronage of King Robert I, the monastery of Dunfermline appointed two monks to officiate as Chaplains there. Salary to be 10 Merks Scots, manse and garden near Chapel, two acres land Ferryhills, and pasturage for one horse yearly. Twenty shillings Scots to maintain ornaments and vestments of altar.

Outline of doorway through which chaplains entered chapel can still be seen in local resident’s wash-house (Wm. Brown’s).

St. James was patron saint of travellers. Prayers on behalf of travellers’ safe journey across the passage would be offered by the priest and thank-offerings would be made at the altar.

The passage of the Forth in those days was a rather hazardous crossing in sailing and row boats, with the possibility of being intercepted by pirates and buccaneers from England and Holland as well as sudden squalls and strong tides.

During the reign of James 1V. (1491), John Dundas of Dundas was charged with the duty of fortifying Inchgarvie to prevent English and Dutch pirates raiding the upper reaches of the Forth. Even in modern times we still have to contend with stress of weather, and we will be fortunate indeed if the new suspension bridge is built without loss of life.

The custom some people observe of throwing a "luck penny" into the Forth on first time crossing the Bridge may well be a survival of the ancient offerings in St. James Chapel.

Dunfermline Monastery also had powers to grant charter for eight oars in ferry boats in 1275. That is nearly seven hundred years ago when all travellers went on foot unless they were in a position to own or hire a horse.

It has been said that Cromwell's troops destroyed the old chapel in 1651 when they landed after their passage of the Forth. This is doubtful as Inchgarvie defences capitulated and there was little resistance to Cromwell's landing according to historical records; they do show, however, that he crossed with 1,500 troops and 500 horse, camped on Ferryhills above Cruickness, and went on to engage the Scots clans in battle at Pitreavie, with disastrous results for the Scots. The Maclean family of Inverkeithing found eight sons dead after the battle.

Regarding the high wall round the burial ground, which bears an inscription—" THIS IS DONE BY THE SAILERS OF NORTH FERRIE IN THE YEAR 1752 "—it seems that when the chapel was abandoned for public worship the adjacent ground was incorporated and became burial ground for those families connected with the chapel. The purpose of the high wail was to protect the graves from "body snatchers" or 6 resurrection men" who were active in those days and made a lucrative living providing corpses as subjects for Edinburgh anatomists, one of whom was known to have had a holiday cottage at Upper Cruicks on the ferry peninsula.

It was for producing such corpses prematurely that the notorious Burke and Hare were arrested. Hare turned King's Evidence and Burke was hanged in Grassmarket, Edinburgh. January 1829. The scoundrel Hare is said to have retired to a lonely old cottage near Scoonie, Fife.

## Education in the Village

At the foot of the lane, east of old chapel, stood an old cottage, Melinkie Cottage, belonging to first quarter of 18th century, being acquired by Sailors' Society in 1769 as school for the village up to 1827.

Thereafter the education of village children was centred in combined school and schoolhouse built by public subscription on the brae above the village. It still survives as a dwelling-house. Present Melinkie Cottage is on adjacent site of old cottage.

Old school buildings of 1875 also remain as community centre. They were derelict for many years after 1912 when present school was opened. During 1914-18 war the old school was occupied as quarters for Women's Army Corps. During 1939-45 as Y.M.C.A. canteen for troops, it having been restored by voluntary labour and donations in February 1932 by North Queensferry Development Association. It is still in use as meeting place for local activities, although in passing years there is less community activities even although population of

village has almost doubled in 30 years, less interest is taken in the amenities which were once a vital necessity.

For instance, no community can exist without a supply of fresh water, so, in the past, all sources of fresh water in the village were protected and preserved.

The Jubilee Well, Willie's Well, Waterloo Well, and stand pipes at foot of Brae, once the only sources of water in the village, are much neglected, yet the surroundings of new housing schemes are kept trim and tidy by Council staff.

Jubilee Well was restored to commemorate Queen Victoria's Jubilee in 1887.

Willie's Well, it is not known who Willie was, probably resident adjacent to well who acted as custodian. It is said that anyone drinking of this well will always return to the village. No one drinks there nowadays, so few are due to return to the village now. It was cleansed and restored in Coronation Year 1937, when new steps were constructed to replace those worn thin and hollow by footsteps of many generations, and that would be about the last time anyone drank of the well. It could easily be restored again and become an asset to the locality, as wishing wells with coins in are to be found world wide.

Waterloo Well was watering trough for horses in stage coach days before the church was built, and date of its restoration was after Waterloo (1815). It obtained its water supply from gravity storage stone tank on which is a cast iron plaque depicting a village housewife upbraiding a foreign sailor for making too free with village water supply. Also Greek mythical Europa and the Bull. Europa was daughter of King Agenor of Phoenicia, and Jove, appearing as a Bull, carried her off to Crete, where she became the mother of Minos and Rhadamanthus. What that has to do with the village water supply is not known.

The school brae and road over the Ferryhills would appear to have been main means of access to the village for centuries. Lower road via Ferry Toll being Queensferry-Perth turnpike road of 1800.

Even with the coming of railways and modern road transport much traffic passes the door of Brae Cottage, in the wall of which there is still a curved iron hook for tethering a horse, possibly a trace horse, to help vehicles up the brae.

Picts, Romans, Saxons, Royalty, troops of Cromwell's English Army, troops of British Army, kilted Black Watch, Army Engineers, Artillery, Polish and Royal Air Force, Navy, and many generations of school children have "marched up and down the brae" like the army of the Grand Old Duke of York, and are still doing it as the new village is now located in the once exclusive residential area "up the Brae."

Within several years, until the opening of the new Forth Road Bridge, many thousands of visitors from all parts of the world are going to use the passage of the Forth and land at North Queensferry to view the progress being made in the construction of Europe's largest suspension bridge, so the time is appropriate for a revival of interest

# FORTH, NORTH QUEENSFERRY 1840



*Photograph of an artist's sketch (unsigned).*
The view is from Hill House (originally the residence of Payton Reid, S.R.A.). It shows some of the inns of that period and Tower House Headquarters of the Ferry Service under Captain James Scott, R.N.



1960. Photograph from Hill House. Old House, West Sands, still there. Tower House, obscured by tenement, Old Inn, Pierhead, Newsagent shop.

*Some facts and figures about the new bridge*

*Forth Road Bridge now in construction when finished early 1963, will have a total length of 6,000 feet. Centre span, 3,300 feet; side spans, 1337 feet; two roadways, 24 feet wide ; two cycle tracks, 9 feet wide; two footpaths, 6 feet wide. Steel structure, 35,000 tons. 30,000 miles of high tensile steel, spun into two cables more than a mile in length and 24 inches in diameter; made by Dorman Long, Middlesborough, who were associated with Sydney Harbour Bridge.*

*Engineers:* *Messrs Mott, Hoy & Anderson;*
*Messrs Freeman, Fox & Partners;*
*A.C. D. Bridge Co.*

that the village folk had in 1930 when they restored Willie's Well, made Jubilee Well gay with flowers and equipped with drinking cup; made waste ground, once village bleaching green, into Children's Gardens, admired by all and a blaze of colour in summer viewed from any angle.

A fine teakwood seat, donated by former pupils of the late Miss Alison Isles and Mrs Gray of Edina, had to be stored on account of vandalism; let's hope it can be restored to its concrete foundation.

Finally, after the opening of the Forth Road Bridge, possibly 1962, the passage of the Forth will cease after a thousand years and more.

What becomes of the old village then?

It could be a quaint survival of past activities by retaining some of the old features around St. James Chapel area for the benefit of future visitors who are bound to visit the old village on account of the proximity of the two mighty structures for road and rail crossing of the Forth, or ruthlessly continue the present demolition programme and rebuild with a view to potential value from tourist angle.

Quoting from Fife Looks Ahead, published in 1946 by Fife County Council Planning Advisory Committee, under the heading:—

> FORTH AND TAY ESTUARIES.
>
> "For a number of years these ferries will be the *entrance* gates to the County. We think, therefore, that their surroundings should form an *ensemble worthy* of the County of Fife.
>
> "Both ferryheads, in Newport and North Queensferry, present to-day (1946) an unattractive aspect, and we are of the opinion that comprehensive plans should be drafted for their reconstruction."

It is many years since the Committee expressed this opinion, and apart from the new access entrance to the Ferry Service there is not much sign of North Queensferry forming "an ensemble worthy of the County of Fife." We have yet to get some kind of shelters at the bus stops that form a link for pedestrian traffic from Ferry Service in busy summer months.

To-day it is an accomplished fact that the North Queensferry ferryhead will cease in 1962-63.

Nevertheless, in the remaining period much heavier traffic will require to be handled at North Queensferry on account of the interest that is being shown in the construction work on the new bridge. Therefore, Fife County Council should still carry on with their plans for the improvement of the village, bearing in mind the abandonment of the many centuries old Passage of the Forth.

## The Boats of the Passage of the Forth

It would appear that the ferryboats of the past were of a fair size as there is mention of "eight oars in new boat of the passage in 1275"

and “accommodation for loading and unloading horses and beasts without hurt.” In 1722 boats were capable of holding as many as thirteen horses.

Regular sailings were maintained in 1669 by having “Two great boats shall contryve the passage that they allwayes be one at each side of the water. That they should be adequately manned in fair weather with at least six hands and seven in wynter and rouche weather.”

There is record of “the best boat of the ferry was wrecked on Inchgarvie, Lammas Day 1634, through lack of skill in fair weather.” Possibly the crew may have been imbibing too freely at Lammas Fair or one of them may have won the Hat and Ribbon Race at Inverkeithing.

Another ferryboat grounded on a rock at Cramond in the same year with all lives lost. Weather must have been a heavy gale from the west that day and the crew paid the penalty for lack of skill and their passengers, too, for Cramond is some distance from the passage. They must have driven before the wind in a heavy squall.

Charges in those days in 1669 were:—” A single person one shilling foure pennies Scots.”

I don’t think married persons would be any cheaper as “passenger and ane horse” was three shillings and foure pence Scots, and “twenty sheep” only fourepence Scots.

Bridge tolls for new road bridge are not fixed yet but may not be much less than ferry charges unless perhaps a standard toll charge for all motor vehicles for swift collection when passing toll point.

The hereditary right of the North Queensferry boatmen, which they claim to have got from Queen Margaret, under which they drew the ferry dues called “The Ferry Silver,” was superseded about 1809 by Act of Parliament instigated by Trustees of Queensferry and Perth Turnpike Road. Ferrytoll, as known locally, is a point where road tolls were collected for turnpike road. The whole ferry service was reorganised at that time under its superintendent, Capt. James Scott, R.N., who resided in the house on shore near present ferry service (Seabank).

The Tower House on Pierhead in the village was headquarters and waiting-room in those days, and the old navigation light-house is still in existence.

There were four large boats. Prince Regent, Blairadam, Primrose, and Earl of Moray; three pinnaces, Pitfirrane, Dunearn, and Keavil, and three yawls; ten vessels in all, so the passage one hundred and fifty years ago would be a busy one to occupy and maintain all those craft.

Later came competition from steamboats plying from Leith and Newhaven to Burntisland, Kinghorn, and Aberdour. Quite a number of us at present day can remember the Galloway steamers that made similar trips to view the Forth Bridge and landing at South Queensferry, and the other steamboats operating from Grangemouth and Bo’ness. They were in operation in 1910.

Perhaps when the Ferry service ceases there may be scope for at least one vessel for sailing around and under the two bridges in the in the summertime for the benefit of tourists.

Capt. Scott, to test steam transit, hired a vessel called “Lady of the Lake,” after which the first “Queen Margaret” was built, commencing service October 1820. Following the “Queen Margaret” came “The Nymph,” “The William Adam,” “John Beaumont,” “Woolwich,” “Forfarshire,” and “The Dundee.”

In 1863 the Railway Company, who were already operating a service to convey railway passengers across, obtained full control. With the opening of the Forth Bridge, traffic across the Forth diminished and, in the days of the ‘Woolwich” and “Dundee,” the service was hourly —8 a.m. to 6 p.m. in summer, and 8 a.m. to 4 p.m. in winter.

With the development of motor transport and the return to the roads for carrying passengers and goods, the demand grew for an improved service.

The Railway Company leased rights to Messrs. Denny Bros., Ship-builders, in 1933, who designed and operated the special Diesel Electric Ferry Boats of to-day—” Queen Margaret,” “Robert the Bruce,” “Sir William Wallace,” and “Mary Queen of Scots.”

Every improvement in the passage brought increased traffic and revenue to the promoters of the 1933 scheme for solving the traffic problem of the passage of the Forth. So Mr John S. Maclay’s remarks on 21st November 1958—” Nowhere in Britain would a bridge make a more spectacular difference to the traffic on which the country’s prosperity depended as at the Forth crossing “--- could have been said by Secretary of State for Scotland in 1930.

The bridge at Kincardine carries very little Edinburgh traffic but did give Fife better access to Glasgow and the West.

Even in wartime, motorists preferred to use the ferry, in fact they had to, for petrol was rationed for essential purposes and could only be obtained for the shortest distance between one’s home and business.

Other boats of the passage were the pilot sailing yawls, taking pilots to and from merchant vessels trading between Norway and other countries and the ports of Grangemouth, Bo’ness, and Alloa.

Peter Anderson, one of the boatmen who, in his early days, sailed such a yawl, is still hale and hearty and probably the oldest inhabitant of the village. He also served on the motor boats along with Amand Muir, who is also living in retirement in the village.

One other boat of the passage is the rescue launch in attendance below the Forth Bridge when workmen are at work, in case a man falls from the bridge, a fatality which is not unknown—the most recent being in 1961.

## Inchgarvie

This island was the means by which the Forth Railway Bridge was built as it enabled firm foundations for the centre cantilever.

Over the centuries it was fortified against pirates and raiders. Qn completion of Forth Bridge and building of Rosyth Dockyard the defences were improved and augmented and a small maintenance garrison was on the island all the year round, and during 1914-18 it was fully manned and equipped with searchlights as defence against submarines and torpedo boat raids.

This area was the scene of the first daylight air raid by Nazi bombing aircraft—I6th October 1939, at 2 p.m., on a Monday afternoon, a bright sunny afternoon. Two light cruisers, H.M.S. Southampton and H.M.S. Duke of Edinburgh, were lying at anchorage near the island. There was damage by bombs and machine guns and 16 killed and 44 injured, all naval ratings, H.M.S. Mohawk being machine gunned as the raiders retired but the raiders did not get back to Germany, the four being shot down by British fighters, Spitfires of the R.A.F. A passenger train was crossing the Forth Bridge at the time of the air raid and passengers got a "grand stand" view, but there was no damage to the Forth Bridge then or at any time during the war, as immediately after the raid anti-aircraft defences were strengthened and a great barrage of balloons surrounded the area, including the Forth Bridge and H.M. Dockyard, Rosyth. These balloons were very sensitive to static electricity charges and once during one thunderstorm fourteen of them went up in flames, and one flaming balloon enveloped the rear portion of a passenger train crossing the Bridge, fortunately no casualties as Auxiliary Fire Service were quick on the scene.

Many magnetic mines were dropped by parachute by enemy air craft over the Forth during night raids. H.M.S. Zulu was damaged by explosion off North Queensferry but invention of degaussing equipment for ships put mine firing mechanism out of action. Ferryboats were equipped, too, with degaussing fittings.

The island was not manned during 1939-45 as air raids and not sea raids were main activities during war.

## The Forth Railway Bridge

The development of steam engines and building of railways for the transport of people and goods during the 19th century necessitated the construction of the great cantilever Forth Railway Bridge. Thus enabling the English invader to explore Scotland without fear of being decapitated as in Celtic times.

In fact, the English have infiltrated into this particular area of West Fife so much that at last census less than 60 per cent. of the inhabitants of the Ferry peninsula were of wholly Scottish origin and only one Scot could speak the

Gaelic. He being a MacDonald, who suffered the massacre at Glencoe in days of yore, could therefore express his feelings about the McLeods and the Sassenachs fluently in both languages.

The Bridge was commenced in 1883 and was formally opened by H.R.H. Prince of Wales (King Edward VII.), who clinched the last rivet on 4th March 1890, seven years and two months after the commencement.

The Bridge has two spans, 1,710 feet, over the North and South deep water shipping channels. At the shore ends the spans are 680 feet. The highest part above high water is 361 feet, and the total length, including approach viaducts, is one mile nine hundred and seventy-two yards.

The total amount of expansion and contraction allowed for changing atmospheric conditions (which is very important in iron or steel constructions) is between six to seven feet, an average rate of 10 inches per 1,000 feet. The weight of steel used was 54,000 tons.

The Bridge is built on the cantilever principle. This principle, as old as the science of engineering, was practically known to the Chinese, but never before had it been applied on so magnificent a scale.

In the Forth Bridge, the central or Inchgarvie cantilever is balanced by a girder to support at both ends of its extremities; whereas the North and South cantilevers have at their shore ends 11000 tons of cast iron ballast suspended in hollow granite pylons to counterbalance the half weight of the connecting girder each has to support at its other end.

From each tower of tubes the brackets had to be extended at an exactly equal rate that the poise might be preserved. Over 40 miles of steel plates were used in the construction of the tubes alone.

The unprecedented width of the central spans imposed on the engineers a greatly more difficult task than providing for the safety of passing trains. The main problem with such a bridge with such spans was to make a bridge that could safely carry its own weight. Each of the 1,710 feet spans weigh about 16,000 tons, while there would be no heavier traffic load than a couple of coal trains with combined weight of 800 tons.

The chief engineer was Sir John Fowler, assisted by Sir Benjamin Baker, who, being the much younger of the two, carried out the bulk of the work.

The practical execution of the work devolved on Sir William Arrol and Mr Joseph Phillips.

While the execution of the work reflects great credit on those who projected the plan, it also developed in the 5,000 workmen, employed seven years in the building, marvellous resources, to which the success of the work is largely due.

Sir Benjamin Baker, bearing testimony to this fact, said:—’ The Forth Bridge is essentially a workman’s bridge,” and he declared: “Its successful construction was due to their individual and collective pluck and ingenuity as much as to the labours of engineers and contractors.

At hundreds of points each independent group of men had to use their own brains and originate expedients to overcome unlooked for difficulties on the spur of the moment without waiting for instructions from engineers or leading foremen in charge."

It is over seventy years since the foregoing statement was made. It may be also of interest to-day to quote from Philip Phillips' book of "Forth Bridge, 1890 ":—" That other bridges will sooner or later rise from the beds of estuaries which will, in size, leave the Forth Bridge far behind, is beyond doubt, but when or wherever they be, still will Scotland hold her great work in triumph, claiming the first, and therefore the grandest of these mighty structures, and when in time to come its rivals rear themselves around the effect remains to be seen, and the truth of the lines of Scotia's poet, Robert Burns, verified:—

"I doubt na', freen', ye'll think ye're nae sheepshank(1)
Ance ye were streekit(2) owre frae bank to bank,
But gin ye be a brig as auld as me—
Tho' faith! that date I doubt ye'll never see
There'll be, if that day come, I'll wad(3) a bodle
Some fewer whigmaleeries(4) in your noddle."

(1) Sheepshank means conceited. (2) Streekit—stretched.
(3) Wad—to bet. (4) Whigmaleeries—fancies.

The verse above Burns is alluding to Brig of Ayr but it could well apply to the new structure now being erected within three-quarters of a mile of the grand old-timer who has served us so well and still in good fettle.

## The Forth Road Bridge

This new bridge will be of the suspension type, suspended from 500 feet high steel towers being erected on Mackintosh Rock on north side and point in river bed off Port Edgar on the south side.

It will have a central span between tower and tower of 3,300 feet, and the shore end spans will be 1,337 feet each. One mile 231 yards of actual bridge with cables carrying the load and stresses of the bridge anchored to the shores by huge concrete anchors.

It took thirty years' agitation on the part of patriotic Scottish citizens to persuade the U.K. Parliament to promote a Bill for the construction of the bridge in 1947. There were many delays and excuses, financial and otherwise, for a further twelve years to get Parliamentary sanction to commence the work.

Scotland had an unemployment problem in the 1920s after the 1914-18 war when the Road Bridge could have been built for £6 million estimated cost but the Government of that day declined to consider the project, yet paid out in unemployment benefit and able-bodied assistance over a period of three years, in the areas of Fife and Lothians a similar amount to keep workers in idleness.

Therefore, it is extremely interesting for these Scots to learn in 1958 from Mr. John S. Maclay, Secretary of State for Scotland, in a

similar U.K. Parliament, when he operated the valve that drove the first pile (1st November 1958) that:—" Nowhere in Britain would a bridge make a more spectacular difference to the traffic on which the country's prosperity depended as at the Forth crossing."

Those who maintained and got their scheme approved in the 1930s that a bridge at Kincardine and double banking the ferry service at Queensferry have been proved wrong.

To-day the project is estimated to cost most than £16 ½ million, plus the amounts already spent by County Councils to improve the Ferryheads, from which Fife has benefited very little, as well as paying the County's financial contribution to the completion of the new road bridge.

Mr Maclay also said:—"The new project would be the largest suspension bridge in Europe, and its construction would call for skills which had not been used in this country before."

The men engaged in the great work would require every ounce of brain dexterity and physical courage that they possessed." "It was a great adventure, all those who will work on the project were assured that they had the confidence and good wishes of everyone in Scotland."

I venture to say it would also have the good wishes of many in England and overseas, among them being some of the Scots that helped to build the 1,650 feet span Arch Bridge over Sydney Harbour in 1930 after they left Scotland and its unemployment problem in the 1920s with R.N. Dockyard, Rosyth, going on care and maintenance and so forth; let's hope it does not happen again.

Also, how similar is Mr. Maclay's tribute to the workers to that of Sir Benjamin Baker when speaking of the builders of the Forth Railway Bridge.

Further, said Mr. Maclay:—" The road bridge would be a massive undertaking at any time, but to build it in the shadow of one of the greatest railway bridges in the world was a challenge of no mean order."

"Someone had said the Forth Railway Bridge had become a symbol of Scotland as the Great Pyramid was a symbol of Egypt." He (Mr. Maclay) had no fear that the bridge builders of the twentieth century would fail to equal their forerunner of the nineteenth century in building a bridge which would compare in beauty of design and function as its noble predecessor. Certainly it was a hearty augury that Sir William Arrol & Co., who carried out the first project, should be one of the three firms to build the superstructure of the new bridge.

Lord Provost Sir Johnson Gilbert, Edinburgh, said:—' Over this long period from 1923 public support for the bridge had never varied." He also noted that the main centre span would be almost as long as Princes Street, Edinburgh, and the two main towers would be two and a half times the height of the Sir Walter Scott Monument in Princes Street Gardens.

*Engineers:* Messrs. Mott, 1-lay & Anderson, and Messrs. Freeman Fox & Partners.

*Contractors:* Messrs. Sir Wm. Arrol & Co. and Messrs. Howards.

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*Dunfermline Press.*

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