

ADVENTIST WORLD RADIO  
NWS2.doc  
 AWR "Wavescan" - DX Program

- 
- \* NWS2: Sunday July 30, 2006
  - \* Contents: A. Early Wireless Predictions
    - B. American DX Report
    - C. Singapore on Shortwave – Part 2;
      - The BBC Far Eastern Relay Station
        1. Introduction
        2. BBC London Makes Overtures for Singapore Station
        3. Penang Transmitter Moved to Singapore
        4. Singapore Station Re-activated
        5. Big New Station for Malay Peninsula
        6. Interim Transfer to Ceylon
        7. Modernization at BBC Tebrau
        8. Back to Singapore Again
        9. British Forces Station in Singapore
        10. Conclusion
- 

### A. Early Wireless Predictions

On a previous occasion we referred to the fact that the concept of radio communication seems to be inferred in two ancient writings. The book of Job in the Old Testament Scriptures makes reference to the usage of electricity to send a message, and one version of the Babylonian Talmud refers to the usage of radio as a voice that travels from one end of the earth to the other. Interestingly, over the years and well before our electronic era loomed upon the distant horizon, knowledgeable men in historic times predicted that electricity would one day be used to transmit messages to distant places.

Note for example, the statement made by Joseph Glanvill more than three hundred and fifty years ago. At the time, he was a student at Oxford University in England with just one more year before he graduated with a Master's degree in theology. He stated in the year 1661 that one day in the long distant future, it would be possible to communicate with distant lands by means of magnetic emanations.

In the year 1825, the renowned Scottish poet and author, Sir Walter Scott, wrote a very popular novel under the title, "The Talisman". The story in the twenty eight chapters contained in this book is about the Scottish view of the cruel crusades of the Middle Ages. On one occasion, two of the characters in the book are chatting, and reference is made to the fact that one day pictures may be conveyed instantaneously from one part of the world to another. This is of course, a preview of television, more than one hundred years in advance.

Give another half century, and we come to the prediction that was made by Willoughby Smith in London. Smith was an electrical engineer with a company that was making and laying undersea cables in Europe and across the Atlantic. In the year 1883, he read a scientific paper to the Institution of Electrical Engineers in London. In this paper, he stated that it would be possible to communicate with passing trains by placing a coil of wire between the rails and feeding it with an intelligible signal. A similar coil of wire underneath the train, he stated, would pick up the signal and pass it on to a telephone in the train.

However, it took another thirty year before practical experiments were carried out to establish wireless communication with a moving railway train. It happened this way. Wireless equipment was installed at two railway stations, Binghamton New York & Scranton Pennsylvania, and also in one of the carriages of the passenger train, the Lackawanna Limited. On Monday November 24, 1913, successful two way communication was maintained by the two wireless stations and the Lackawanna Limited as it traveled down the track away from

New York City at sixty miles an hour. Next day, news messages were transmitted in Morse Code by the two fixed stations and picked up on the moving train, to the amazement and delight of the high paying passengers.

Our final wireless prediction took place three years later, in November 1916. Young David Sarnoff, a migrant from Minsk in Russia, wrote a memorandum to his boss, stating his firm conviction that “radio music boxes” would one day become very popular. The Sarnoff family had landed in New York a mere sixteen years earlier and their son David was at this stage employed with a wireless telegraph company in New York. Sarnoff later became very influential in the radio world as the managing director for RCA, the Radio Corporation of America. Young David Sarnoff was right, and today, “radio music boxes”, or as we call them, “radio receivers”, are so prolific around our world that there are now more radio receivers than there are people.

It is true; sometimes human beings do make correct predictions regarding events coming in the future. However, as we are aware, not all of these predictions about the future are actually fulfilled. Sometimes the predictors make wild mistakes, and their statements about what they consider will happen in the future prove to be totally inaccurate.

This is not so with the Holy Bible. The predictions about the future that are contained in the Scriptures prove to be reliable and accurate. Way back more than four thousand years ago, a prophet in ancient times made a prediction that a massive flood would destroy the whole world. This prediction by the Biblical Noah did come to pass, and most life forms were destroyed.

A similar prediction was made by Jesus two thousand years ago when he was living in our world. He stated that the time would come when He will come again, at the end of our world. This has not happened yet, but according to the statements in the Scriptures, it will happen, and apparently quite soon. The

invitation that Jesus gives, is for us to learn about these things and to make the necessary preparations so that we will not be caught unawares.

### B. American DX Report

\* AUSTRALIA: During the past thirty years or more, there have been several occasions when some of the high powered shortwave transmitters of Radio Australia have been diverted for internal coverage of the continental areas. It was back on Christmas Eve in the year 1974 that Cyclone Tracy hit the Northern Territory and destroyed 80% of the city of Darwin. The mediumwave transmitter of the local ABC station, 8DR, as well as the shortwave transmitters of Radio Australia on Cox Peninsula, were all disabled, thus eliminating all radio communication to the local inhabitants. In answer to this devastating situation, emergency radio programming was produced in the Darwin studios of the ABC, forwarded to Melbourne by landline, re-routed to Shepparton in Victoria, and broadcast on a 100 kW shortwave transmitter with an antenna that was beamed towards Darwin.

Three years later, there was a technical fault at the communication station VJY which was located at the Radio Australia receiver station on Cox Peninsula. Thus the only available program feed to the isolated station 8JB in Gove was non-functional. In order to provide programming to the largely Aboriginal community in the area, the regular programming from 8DR in Darwin was once again forwarded to Melbourne over the landline circuit, re-routed to Shepparton and broadcast on a 100 kW transmitter with an antenna beamed towards Gove in the Northern Territory. This programming was then picked up off air and fed to the mediumwave transmitter 8JB at Gove.

In recent time, during the outages at the three regional shortwave stations in the Northern Territory, VL8A, VL8K & VL8T, the ABC programs have been

relayed to the sparsely settled areas of the Northern Territory from a Shepparton transmitter. Currently, this programming can be heard on 11880 kHz during their local daytime and on 6020 kHz at night.

A few months back, there were two major cyclones that hurled across Cape York Peninsula in northern Queensland and on into the Northern Territory. On these two occasions, ABC emergency programming from the mediumwave station 4QY in Cairns was beamed into the stricken areas on shortwave from Shepparton.

On all of these occasions, the ABC and Radio Australia have honored reception reports with QSL card and letters. Just recently, we here in Indiana have received a QSL letter from the ABC in Cairns together with stickers and ABC pamphlets. A similar reception report sent to Brisbane is yet to be honored with a reply.

\* USA: Over here in the United States, there are more than fifty shortwave transmitters, owned and operated by non-government organizations and these are on the air for coverage into various areas of the Americas. Many of these privately owned stations are associated together organizationally as NASB, the National Association of Shortwave Broadcasters. It will be remembered that the annual meeting of NASB was held at the international headquarters of Adventist World Radio in Silver Spring, Maryland, on the edge of Washington DC, back in May.

Half a dozen of the shortwave transmitters with a callsign in the K series are located in the western areas of the United States. These are the details, in alphabetic order:-

Station KAIJ is located near Dallas Texas and it operates with two transmitters, 50 kW & 100 kW. They are on the air daytime on 13815 kHz and night time on 5755 kHz. Station KAIJ was originally identified under the callsign KCBI.

Station KJES is located at Vado in New Mexico. They are on the air morning, afternoon and evening, on three different channels, 7555, 11715 & 15385 kHz, using just the one 50 kW transmitter.

Station KTBN is located near Salt Lake City, Utah and they are on the air twenty four hours daily with a single 100 kW transmitter. Their schedule shows them using 15590 kHz during the day and 7505 kHz at night. This station was previously known as KUSW.

Station KVOH is located near Los Angeles and their schedule shows them on the air with two transmitters at 50 kW on 9975 & 17778 kHz.

A projected station, apparently still under construction, is listed with the callsign KIMF. This station is located in southern California. It is not known for certain whether this station will ever become a reality.

Most of the privately owned shortwave stations in the United States will issue a QSL card. Why don't you set a goal, to obtain a QSL from each of these privately owned shortwave stations in this country?

### C. Singapore on Shortwave – Part 2

#### The BBC Far Eastern Relay Station

##### 1. Introduction

Right, now let me see! How many of you people listening out there remember that about three months ago we presented the story of radio broadcasting in Singapore? If you remember that story, please raise your hand high! A little higher!

Yes, yes, I know. This is radio, not television, and of course I am not able to see any of you out there. But anyway, on the previous occasions, we presented the lengthy and very interesting story of radio broadcasting on the island of Singapore. That story was complete, except for the story of the BBC,

the British Broadcasting Corporation. This is the topic for today's story, the BBC Far Eastern Relay Station.

## 2. BBC London Makes Overtures for Singapore Station

Let's go back to the year 1937, and that was the year in which the BBC began to give consideration to establishing a shortwave relay station in Asia. They began to make overtures to the commercially owned radio station, BMBC, the British Malaya Broadcasting Corporation, in Singapore. The intent was to buy this station and then to upgrade it into an international shortwave relay station to carry BBC programming to the growing radio audiences in Asia. These negotiations seemed to move a bit slowly, but considerable progress was made ultimately. A QSL letter received in Australia in 1940 identified the station simply as "Broadcast Station", seeming to indicate that by this time there was some confusion as to the exact status of this station.

In 1939, plans were made to install a 100 kW shortwave unit at the new transmitter base still under construction at Jurong, near the now famous Jurong Bird Park. The large Marconi transmitter from the Chelmsford factory in England was sent out by ship late in the year 1940, but the ship was torpedoed and sunk en route. Soon afterwards, a 50 kW RCA transmitter was sent out from the United States, but when the equipment was received in Singapore, it was discovered that the power transformer was designed for the 110 volt 50 cycle power system in America, not the 240 volt 60 cycle power system in Singapore. At the end of the year 1941, it was announced that work on the shortwave station at Jurong was almost complete; but, there were no large shortwave transmitters.

## 3. Penang Transmitter Moved to Singapore

In August 1942, ZHJ, the 7½ kW Marconi transmitter at Penang, was transferred to Singapore and installed at Jurong where it went on the air as

“Radio Shonan” with programming beamed to Australia. The last known broadcast as “Shonan Radio” took place on February 3, 1945.

#### 4. Singapore Station Re-activated

Soon afterwards, radio staff from British radio stations in Delhi India and Colombo Sri Lanka were transferred to Singapore to re-activate the radio station with whatever equipment was still available. This station was then re-opened as BMA, the British Military Administration, in October 1945. It was noted in Australia on four different shortwave channels, and also on mediumwave 1333 kHz.

At this stage, three different organizations were noted on air, each with its own programming, and all using the same facilities. These were BMA British Military Administration, SEAC South East Asia Command, and BFEBBS British Far Eastern Broadcasting Station. All three organizations issued QSL cards to verify reception reports. The SEAC usage of the station was concluded at the end of June 1946 and at the same time BMA officially became Radio Malaya, and that of course is a long story for another occasion.

Initially, BFEBBS produced its own programming in the older studios located in Cathay Building, but on January 30, they moved into their own studios at Caldecott Hill on Thomson Road. Network programming in area languages was identified in the color schemes, as Purple & Orange. Off air relays of the BBC in England began five months later.

A total of four shortwave transmitters, 10 kW units with the model number SWB-11, were shipped from India, and these were installed at Jurong and activated progressively, beginning in January 1946.

In mid 1948, it was announced that the BBC in London would take over the BFEBBS station in Singapore as the BBC’s first overseas base, and this change in ownership was finalized on August 8.



## 5. Big New Station for Malay Peninsula

However, in addition to the BBC developments in Singapore, there were simultaneous developments on the Malay peninsula. The original concept of installing a 100 kW shortwave transmitter at Jurong was cancelled due to the fact that the new airport was nearby and the tall antenna towers would prove to be a hazard to aircraft maneuvers. In mid 1946, the BBC commissioned a site survey in Johore state, just across from Singapore, for the construction of a massive, high powered, shortwave relay station. Just one year later, a large tract of land near Tebrau was procured, 450 acres of jungle and small rubber plantations.

Plans for this new BBC relay station called for two transmitters at 100 kW and four at 7½ kW, with a total of twenty antennas. A little more than three years later, the new facility was ready for the installation of the electronic equipment. During the Christmas season in the year 1950, the first 100 kW transmitter was activated, followed by the second 100 kW unit just one month later. Subsequently, the four smaller units at 7½ kW were also installed and activated.

## 6. Interim Transfer to Ceylon

During the interim period while the facility at Tebrau was under construction, there was another interesting change of location for this BBC station in Asia. The usage of the shortwave station at Jurong in Singapore was phased out in 1949 and the facility was granted to Radio Malaya with its headquarters in Singapore.

There was a new British shortwave station recently completed at Ekala in Ceylon and this came on the air as Radio SEAC, South East Asia Command. In April 1949, this station was taken over as a BBC relay station to fill in until the new station at Tebrau was ready for service. Twenty one months later, at the end of the year 1950, the BBC terminated its usage of Radio SEAC in Ceylon

and concentrated its relay programming for Asia via the new Tebrau station on the Malay peninsula.

## 7. Modernization at BBC Tebrau

Twenty years later after its original construction, a modernization project was implemented at the BBC Tebrau. The four older transmitters at 7½ kW were removed and four at 250 kW and four at 100 kW were installed progressively, beginning in December 1970. At the height of its electronic power, BBC Tebrau was on the air with a total of ten shortwave transmitters, four at 250 kW and six at 100 kW. The feed lines from the transmitters to the antenna systems were the longest in the world, somewhere around half a mile in length.

## 8. Back to Singapore Again

However, another problem for the BBC lay on the horizon. Malaysia was now an independent nation and the central government in Kuala Lumpur declined to renew the lease for the BBC Tebrau. Initially, consideration was given to establishing a new station in Brunei on the island of Borneo. When this did not work out, consideration was given to Christmas Island in the Indian Ocean, with the suggestion that Radio Australia join in the project. Ultimately though, Singapore was chosen, and thus the BBC announced in 1976 that they planned on closing the Tebrau station and relocating again on Singapore island. However, the Malay government did extend the lease for the BBC in Tebrau until the new Singapore station was completed and ready for service.

The new BBC site in Singapore is located at Kranji on the northern edge of Singapore island and it is only ten direct miles from the previous location at Tebrau in Malaysia. This new station is compacted into just four acres of swampy landfill, and at one stage during early construction, eight hundred truck loads of soil every day were dumped in to raise the land level about three feet.

Even so, the main two storey transmitter building is built on concrete piles and some of the antenna towers are actually located in the waters of a tidal ocean area.

The BBC Far Eastern Relay Station at Kranji in Singapore now contains nine transmitters, eight of which were transferred from Tebrau; four at 100 kW and four at 250 kW. An additional 250 kW transmitter was installed just before the end of the century. There are seventeen towers supporting eighteen antennas for coverage of all major areas of Asia. In February 1978, test broadcasts began from the first transferred transmitter and by June a little more than a year later, all eight transmitters were taken into regular broadcast service. The final broadcast from the BBC Tebrau took place on Sunday March 18, 1979. The doors were closed, and the two old units at 100 kW were abandoned.

## 9. British Forces Station in Singapore

However, before we conclude the Singapore story, there was another shortwave station of interest on this crowded island, and that was BFBS, the British Forces Broadcasting Service. Interestingly, BFBS Singapore was one of the few shortwave stations in our world that evaded public attention in the international radio world for a year or more. This station was launched in 1952 and it was not, shall we say, "discovered", until April in the following year by two international radio monitors in Adelaide, South Australia; Rex Gillett and Jim Paris. The other notable shortwave station that evaded international attention for more than a year was NYAB in Thimpu, Bhutan, many years later.

The original BFBS transmitter was a 7½ kW Marconi from England and the main fixed channel was 5010 kHz. This unit was installed at the main transmitter base at Jurong and the programming was usually in Nepali and English, though occasionally other languages were heard at times. An FM outlet was added to this station on November 2, 1966 and this transmitter was co-sited with the

splendid studio building in the British army base at Tanglin on the edge of Singapore city.

When British army troops moved away five years later, BFBS Singapore was closed, in November 1971. The shortwave transmitter was gifted to Radio Singapore who then programmed it on the same regular channel in the 60 metre band, 5010 kHz, in parallel with their own unit on 5052 kHz. However, the FM unit was re-activated as BFBS by popular demand in time for Christmas. Nevertheless, the station finally went silent in four years later again in 1975 and the FM transmitter was then taken over for the relay of BBC programming and remotely operated from Tebrau. The studio building then was re-furbished and it is in use today as the office for commissioned officers in the Singapore army.

## 10. Conclusion

And so that is the saga of British broadcasting in Singapore, a story that occupies nearly seventy years. Many QSL cards have been issued over the years by the BBC for its four different locations, Jurong, Ekala, Tebrau and Kranji; and in fact you can obtain a QSL card even to this day direct from the station in Singapore itself. The BFBS station at Tanglin also issued QSL cards, for both their FM and shortwave outlets. You can hear the BBC Far Eastern Relay Station Singapore in almost every country of the world at some time during their broadcast day. You should check the World Radio TV Handbook for scheduling that might be heard in your area.

=====

Dr. Adrian M. Peterson  
 DX Editor - Adventist World Radio  
 Board Member – National Association of Shortwave Broadcasters (USA)

=====

# 1. Development of BBC Far Eastern Relay Station Timelines

Year	Date	Metres	kHz	kW	Call	Information	Reference
<b>BMBC British Malaya Broadcasting Corporation - Singapore</b>							
1937	Mar 1					BMBC British Malaya Broadcasting Corporation	CBA 1979 105
1940			SW		BS	Letter, BMBC now "Broadcast Station"	R&H 12-40 57
<b>SEAC South East Asia Command - Singapore</b>							
1946	Feb		SW			SEAC HQ Radio SEAC relay to Delhi	RN 3-46 135
1946	Mar					SEAC HQ Radio SEAC relay to Delhi	RN 4-46 120
1946						SEAC BFEBS service of SEAC	RN 83.1 11-48 65
1946	Jun 30					SEAC No further announcements as SEAC	RN 83.1 11-48 65
<b>BMA British Malaya Administration - Singapore</b>							
1945	Oct		SW			BMA 4 channels heard in Australia	R&H 79.13 11-45 36
1945			SW			BMA + BFEBS 1 <sup>st</sup> QSL, BMBC card altered	R&H 79.13 12-45 36
1945	Dec		SW			BMA + BFEBS Shared studios & transmitters	RN 12-47 160
1946	Jun 30		SW		RM	Became Radio Malaya	RN 83.1 11-48 65
1946	Jul	MW	1333			BMA Heard in Australia, weak signal	LI 79.24 13-7-46
1947	Aug		SW			BMA + BFEBS Shared transmitters	R&H 79.13 10-47 76
1947	Sep		SW			RM & BFEBS Now separate transmitters	RN 12-47 160
1947			SW		RM	Became Radio Malaya	RN 12-47 160
<b>BFEBS British Far Eastern Broadcasting Service - Singapore</b>							
1937			SW			BBC Discussions, need for Far East SW station	BBCE 349
1939	Sep		SW			BBC Quick plans for new 100 kW at Jurong	BBCE 349
1939			SW			BBC Plans to buy BMBC	LI 79.24 10-39 & 12-39+
1939			SW			BBC Plans to establish 100 kW SW station Jurong	LI 79.24 40
1940	Aug		SW			BBC New HP SW being installed Jurong	Papers 79.7 29-8-40 10
1940	Sep		SW			BBC New 100 kW facility under construction	ISWC 9-40 6
1940	Dec		SW			BBC Constructing new 100 kW facility	R&H 79.11 12-40 57
194x			SW			BBC 100 kW Marconi lost, ship sunk	BBCE 349
194x			SW			BBC 50 kW RCA arrived no power t'formers	BBCE 349
1941	Dec		SW			BBC Facility & antennas nearly completed	BBCE 349
1942	Feb Late		SW			BMBC Closed under British	ATCRLG 3
1942	Mar 27		SW		RS	Returned to the air as Shonan Radio	ATCRLG 3
1942	Aug		SW	10	RS	Penang unit transferred to Jurong Singapore	RA 204
1945	Feb 3		SW		RS	Shonan Radio last heard in USA	RN 84.2671 4-45
1945	Oct		SW			BFEBS Staff transferred from Colombo & Delhi	RN 83.1 11-45 65
1945	End		SW			BFEBS Re-established, Foreign Office 4 @ 7½ kW	BBCE 349
1945			SW			BFEBS Plans for 100 kW abandoned, near airport	BBCE 349
1945			SW			BFEBS & BMA 1 <sup>st</sup> QSL, BMBC card altered	R&H 79.13 12-45 36
1945	Dec		SW			BFEBS & BMA Shared studios & transmitters	RN 12-47 160
1945	Dec		SW			BFEBS Cathay Building studios	RN 83.1 11-48 65
1946	Jan 30		SW			BFEBS Moved into own studios, Thomson Rd	RN 83.1 11-48 65
1946	Feb		SW			BFEBS Transferred to own studios	RN 12-47 160
1946	Jul		SW			BFEBS 1 <sup>st</sup> relays from BBC began	RN 83.1 11-48 121
1946	Sep		SW			BFEBS Now 2 SW in parallel	R&H 77.10 10-46 71
1947	Aug		SW			BFEBS & BMA Shared transmitters	R&H 79.13 10-47 76
1947	Sep		SW			BFEBS & RM Now separate transmitters	RN 12-47 160
1947	Sep		SW	10		BFEBS New 10 kW unit testing, 2 more planned	RN 10-47 181

1947	SW		BFEBBS & RM Now separate transmitters	RN 12-47 160
1947 Oct	SW		BFEBBS New channels Purple Network	R&H 79.13 12-47 82
1947 Nov	SW		BFEBBS Orange & Purple Networks	WRHB 1947 57
1947 Nov	SW		BFEBBS Orange & Purple Networks some UK relays	RN 12-47 160
1948 Jan	SW		BFEBBS BBC will take over this station	RN 83.1 11-48 65
1948	SW		BFEBBS 4 transmitters on air	RN 5-48 138
1948	SW		BFEBBS All at 7½ kW except 21720 at 5½ kW	RN 5-48 167
1948	SW		BFEBBS Orange & Purple dropped, now relay BBC	RN 5-48 167
1948	SW		BFEBBS BBC taking over this station	R&H 77.14 8-48 84
1948 Jun/Jul	SW		BFEBBS Just taken over by BBC, 1 <sup>st</sup> overseas base	RN 7-48
1948 Aug 8	SW		BFEBBS BBC officially took over this station	RN 83.1 11-48 122
1949 Feb 27	SW		BFEBBS Tests 2 channels, ended Mar 3	R&H 79.13 4-49 85
1949	SW		BFEBBS BBC usage of Singapore phased out	

### BBC Relay Station – Tebrau

1945	SW		BFEBBS Plans for 100 kW abandoned, near airport	BBCE 349
1946 Jul	SW		BBC 1 <sup>st</sup> site survey in Johore state	BBCE 349
1947 Jul	SW		BBC Tebrau finally chosen, 450 acres	BBCE 349
1947	SW		BBC 2 @ 100 & 4 @ 7½, 20 antennas planned	BBCE 350
1948 May	SW		BBC Plans for 5 or 6 @ 100 kW	RN 5-48 138
1948	SW		BBC Plans for large new station	R&H 77.14 8-48 84
1950 Mid	SW		BBC Installation of electronics commenced	BBCE 350
1950 Christmas	SW	100	BBC 1 <sup>st</sup> HP unit ready for service	BBCE 350
1951 Jan	SW	100	BBC 2 <sup>nd</sup> HP unit ready for service	BBCE 350
1951 Jul	SW	100	BBC New schedule for both 100 kW units	RTVN 7-51 113
1964 Jan	SW		BBC Increased use of this station	RTV&H 77.14 1-64 101
1970 Dec	SW		BBC Modernization plan began, 4 @ 250 & 4 @ 100	BBCE 458
1973 Jan	SW		BBC Lease expires 1975, next Christmas Is?	RTV&H 1-73 121
1974 Apr	SW		BBC 25 year lease expires plans Brunei	RTV&H 77.14 5-74 102
1976	SW		BBC Plans to transfer to Singapore	R&H 79.17 4-76 113
1977 Jan	SW	250	BBC 1 <sup>st</sup> 250 kW transferred to Kranji	RMI 206
1979	SW		BBC Transfer to Singapore completed	R&H 79.17 5-79 114
1979 Mar 18 Sun	DW	100	BBC Tebrau last broadcast, 2 @ 100 kW abandoned	RMI 206

### BBC Relay Station – Ekala, Ceylon

1949 Apr	SW	100	BBC 100 kW & 7½ SEAC, temporary relay began	BBCE 350
1950 Dec 31	SW	100	BBC BBC relay via Ekala ended	BBCE 350

### BBC Relay Station – Return to Singapore

1976	SW		BBC Plans to transfer to Singapore	R&H 79.17 4-76 113
1976	SW		BBC Work commenced on new station	RMI 206
1977 Jan	SW	250	BBC 1 <sup>st</sup> 250 kW transferred from Tebrau	RMI 206
1978 Feb	SW	250	BBC Test broadcasts begun 7180 kHz	RMI 143
1978 Feb 1	SW	250	BBC 1 <sup>st</sup> two units began regular service	RMI 158
1978	SW	250	BBC Test broadcasts soon from 2 <sup>nd</sup> unit	RMI 143
1978 Mar	SW	250	BBC 2 <sup>nd</sup> 250 kW expected to commence service	Letter
1978 May	SW	250	BBC Two transmitters on air	NZDXT
1978 Jul 1	SW	250	BBC 3 <sup>rd</sup> 250 kW began regular service	RMI 158
1978 Aug 1	SW	250	BBC 4 <sup>th</sup> transmitter expected in regular service	RMI 158
1979	SW		BBC Transfer from Tebrau completed	R&H 79.17 5-79 114
1979 Jun	SW		BBC All 8 on air, 101-104=250 kW, 105-108=100 kW	RMI 207
1983 Aug End	SW		BBC Satellite feed commenced	ADXN 8-83 7
199x	SW	250	BBC Additional transmitter installed	WRTVHB

## 2. British Forces Broadcasting Service - BFBS Singapore

## Timelines

Year	Date	Metres	kHz	kW	Call	Information	Reference
<b>BFBS British Forces Broadcasting Service – Tanglin</b>							
1952					BFBS	Launched by Capt W. J. O. Ettridge.	Taylor 159
1952				10	BFBS	10 kW Marconi transmitter	Taylor 160
1952		4963	7½		BFBS	On air more than year before noted	R&H 79.14 6-53 90
1953	Apr 1	5010	7½		BFBS	RCA transmitter, new channel	R&H 79.14 6-53 90
1953	Apr	5010	7½		BFBS	New station heard in Adelaide	R&H 77.14 5-53 84
1953	Apr	5010	7½		BFBS	New station heard in Adelaide	RN 6-53 133
1953	Jul	5010	7½		BFBS	Several languages, English soon	RN 8-53 88
1954		5010	7½		BFBS	Also used by Radio Malaya Singapore	WRHB 1954 79
1956		5010	7½		BFBS	Used only by BFBS	WRHB 1954 79
1962	Apr		7½		BFBS	Improved signal in Australia	R&H 77.14 5-62 103
1968	Jul	6040	7½		BFBS	Moved to new channel	R&H 79.16 8-68 145
1970	Jul	6040	7½		BFBS	Good signal in Australia	EA 79.17 8-70 175
1971	Mid	5010	7½		BFBS	SW transmitter Jurong handed over to RS	RA41 2
<b>BFBS Singapore – FM Relay</b>							
1966	Nov 2	88.9		5	BFBS	FM unit launched	Taylor 160
1971	Nov	88.9		5	BFBS	Troops leaving, station to be closed	Taylor 162
1971	Dec 25	88.9		5	BFBS	Rejuvenated by Peter Buckle	Taylor 162
1971		88.9		5	BFBS	Closed few months ago, now R Sing	EA 79.17 3-72 117
1973	Mid	88.9		5	BFBS	Station back to normal again	Taylor 163
1975		88.9		5	BFBS	Station finally closed	Taylor 163
1975		88.9		5	BBC	Became BBC relay, controlled from Tebrau	RA41 2
<b>Radio Singapore – Ex BFBS</b>							
1971	Mid	5010	7½		BFBS	SW transmitter Jurong handed over to RS	RA41 2
1971		5010	7½		BFBS	Closed few months ago, now R Sing	EA 79.17 3-72 117
1971		5010	7½		RS	Parallel 5052 kHz	RA41 2
1972		5010	7½		RS	ATC QSL	EA 79.17 4-72 118
1994	Dec 27	5010	7½		RS	Last known logging	

### 3. Development of Jurong Shortwave Station in Singapore

#### Timelines

Year	Date	Metres	kHz	kW	Call	Information	Reference
<b>BMBC British Malaya Broadcasting Corporation - Singapore</b>							
1937						Work commenced on SW base at Jurong	LI 79.24 10-39
<b>BBC - Singapore</b>							
1939	Sep			100		Quick plans for 100 kW at Jurong	BBCE 349
1939						BBC attempt to buy BMBC	LI 79.24 10-39
1939				100		Plans to establish 100 kW SW station	LI 79.24 40
1940	Aug					New HP SW being installed	79.7 29-8-40 10
1940	Sep					New 100 kW under construction	ISWC 9-40 6
1940	Dec					Constructing new 100 kW	R&H 79.11 12-40 57
1941				100		100 kW Marconi lost, ship sunk	BBCE 349
1941				50		50 kW RCA arrived no power t'formers	BBCE 349
1941	Dec					Facility & antennas nearly completed	BBCE 349
<b>Radio Shonan - Singapore</b>							
1942	Aug		12000	7½	RS	ZHJ SW transmitter from Penang installed	RA 204
<b>BFEBBS British Far East Broadcasting Station - Singapore</b>							
1945						BFEBBS 2 SWB11 units from India installed	RN 83.1 11-45 65
1946	Jan 19					BFEBBS Test broadcasts began 1 <sup>st</sup> unit	RN 83.1 11-45 65
1946	Feb 4					BFEBBS 1 <sup>st</sup> unit began regular schedule	RN 83.1 11-45 65
1946	Feb 25	6770		10		BFEBBS 2nd unit began regular schedule	RN 83.1 11-45 65
1947	Nov					BFEBBS 4 @ 10 kW in use	WRHB 1947 57
1949						BFEBBS Registrations 50 & 10 kW ZHP & ZHL	YB 84.200 218
1949						BFEBBS BBC usage of Singapore phased out	
<b>BMA British Military Administration – Singapore</b>							
1945	Oct					BMA 4 channels heard in Australia	R&H 79.13 11-45 36
1946	Jun 30					RM Became Radio Malaya	RN 83.1 11-48 65



## 4. Transmitter Locations & Facilities for the BBC Far Eastern Relay Station

### Timelines

Location	Years	Unit	Transmitters	Information
Jurong 1	1940	BBC	1 @ 100	Lost at sea
	1941	BBC	1 @ 50	Wrong transformers
	1942	Shonan	1 @ 7½	ZHJ from Penang
	1947-1971	BFEBBS	4 @ 7½	Also RM 2 @ 10 kW
Jurong 2	1961-1992	SBC	3 @ 10 & 8 @ 50	Enlarged facility
Ekala	1949-1950	BBC	1 @ 7½ & 1 @ 100	SEAC station
Tebrau	1950-1970	BBC	4 @ 7½ & 2 @ 100	Initial usage
	1970-1979	BBC	6 @ 100 & 4 @ 250	Modernization project
Kranji	1977-2xxx	BBC	4 @ 100 & 4 @ 250	Transferred station
Kranji	1992- 20xx	RSI	1 @ 100 & 6 @ 250	New station

## 5. QSLs from Singapore Stations

Call	Location	kHz	kW	Year	Date	QSL	Information	Reference
BS	Jurong	SW		1940		Letter	BMBC now Broadcast Stn	R&H 12-40 57
BMA	Singapore			1945		Card	Old BMBC card altered	R&H 79.13 12-45 36
BMA	Singapore	9558		1945			Cushen	R&H 79.13 1-46 36
BMA	Singapore	11960		1945	Oct 6	Card	Plain text	AMP
BFEBBS	Jurong	SW	7½	1947		Card	Very simple	R&H 79.13 10-47 77
BFEBBS	Jurong	1333		1947	May 26	Letter	Right program wrong kHz	LI 16-11-46
BFEBBS	Jurong	15300	7½	1948	Jun 1	Card	Plain text card	AWR
BBC	Tebrau	SW				Cards	Numerous	AMP
BBC	Kranji	17710		1986	Sep 10	Card	Building & antennas - 1	ASWLC
BBC	Kranji	SW		1989		Card	Building & antennas - 2	ADXN 11-89 4
BBC	Kranji	9740		2003	Oct 17	Card	Building & antennas - 3	WB copy
BBC	Kranji	SW				Cards	Numerous	AMP
BFBS	Jurong	5010	7½	1953	Apr		ATC QSL	R&H 79.14 6-53 90
BFBS	Jurong	5010	7½	1971	Apr 6	Card	BFBS text card	AMP
BFBS	Jurong	5010	7½	1971	Apr 13	Card	BFBS text card	AMP
RS	Jurong	5010	7½	1972			ATC QSL old BFBS	R&H 79.17 4-72 118
RS	Jurong	5010	7½	1971	Nov 15	Card	Old BFBS transmitter, plain text card	AMP
BFBS	Tanglin	88.9	7½	1974	May 7	Card	BFBS text card	AMP

## 6. Organizational Developments in Singapore

### Timelines

Year	Date	Unit	Information	Reference
1937		BBC	Discussions, need for Far East SW station	BBCE 349
1937	Mar 1	BMBC	British Malaya Broadcasting Corporation	CBA 1979 105
1939	Sep	BBC	Plans to establish BBC SW station at Jurong 100 kW	BBCE 349
1939		BBC	Implements plan to purchase BMBC	LI 79.24 10-39 BBCE
1940		MBC	Taken over by gov as MBC Malayan Broadcasting Corporation	CBA 1979 105
1940		BS	"Broadcasting Station" - BBC taking over	QSL R&H 12-40 57
1941	Dec	MBC	Facility & antennas nearly completed	BBCE 349
1942	Mar	RS	Administration as "Shonan Radio"	ATCRLG 3
1945	Sep 3	BMA	Pan-Malayan Dept of Broadcasting set up as BMA	Papers 77.5 27
1946		RM	Radio Malaya established, took over from BMA	Papers 77.5
1959	Jan 4	RS	Radio Singapore established	Papers 77.5
1994	Mid	RSI	Radio Singapore International established	Connexion 10-96 1

## 7. Studio Locations in Singapore

### Timelines

Year	Date	Unit	Location	Reference
1939		BMBC	Cathay Building, Thomson Road	Book 1997
1945	Dec	BFEBBS & BMA	Shared studios & transmitters	RN 12-47 160
1945	Dec	BFEBBS	Cathay Building studios	RN 83.1 11-48 65
1946	Jan 30	BFEBBS	Moved into own studios, Thomson Rd	RN 83.1 11-48 65
1952		RS	Old building Caldecott Hill	Book 1997
1975	Jul	RS	New building Caldecott Hill	Book 1997

## 8. Early Wireless Predictions

### Timelines

Year	Land	Location	Name	Event	Reference
1500	Uz	Desert	Job	Prediction, sending messages by electricity	Job 38:35
200	Iraq	Babylon	Talmud	Prediction, Talmud, radio a worldwide voice	PC
1661	England	Oxford	Glanvill	Prediction, send messages by magnetic waves	Internet
1825	Scotland	Edinburgh	Scott	Novel "The Talisman" presents concept television	WS 170
1883	England	London	Smith	Prediction, communicate moving trains	Internet
1913	USA	Delaware	DL&WR	Nov 24, 1 <sup>st</sup> transmissions moving train	WS 179
1916	USA	New York	Sarnoff	Nov, "radio music boxes"	Internet