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REPORT FOR THE QUARTER ENDING:

December 31, 1978

TECHNICAL ASSISTANCE: Hospital Administration

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ACTIVITIES REPORT

A. OBJECTIVES OBTAINED DURING THE REPORT PERIOD: COMMISSIONING
THE NEW MEDICAL CENTER

I.0 Planning Phase - July thru August 1978

- I.1 The detailed plans and programs prepared by the American University of Beirut (AUB) consultants were reviewed with newly appointed MADGE consultants and AUB plans were re-organized in light of emerging facts as the new Salmaniya Medical Center, nearing completion, could be inspected and systems originally planned on drawings could be related to actual locations.
- I.2 The organization of the Medical Center was grouped into 31 departments: 11 clinical and 20 administrative, and the actions to be taken in each department from staffing to facilities, equipment and operating systems were detailed.
- I.3 The organization and operation of the commissioning team was determined and its relationship with the Ministry of Health Directorates and Governing Body established. The schedule of transfer of initial team members from plant engineering, domestic service, nursing and security was finalized and the move of these personnel effected.
- I.4 Following a detailed review of the new facilities and the plant house a report was presented to the Governing Body outlining major deficiencies in air-conditioning, ventilation and sweet and brackish water requirements. An estimated budget for the correction of these deficiencies and for spare parts was outlined to the Governing Body with an urgent request to establish both the required personnel and budget to overcome these particular problems prior to summer 1979.
- I.5 A schedule of receipt and inspection of facilities and equipment was established.

2.0 Initial Action Phase - September 1978

- 2.1 Patient use equipment on the different floors of the new center was received and inspected.
- 2.2 Allocation of floor space to the clinical departments; assignment of office space for Chairmen of departments and nursing officers together with identification of areas whose opening would be delayed because of nursing shortage were finalized following presentation and discussion with members of the Medical Board.

- 2.3 Rearrangement of Outpatient Clinics, Emergency Room together with E.C.G, E.E.G. and specimen collection areas were finalized after discussion with supervisory staff of these departments.
- 2.4 A policy for the use of single rooms was established and approved by the Governing body.
- 2.5 Functional studies of service departments including C.S.S.D, Catering, Cafeteria, Pharmacy, Linen and Laundry, Radiology and Clinical Pathology were carried out in detail and operating procedures outlined.
- 2.6 Deficiencies in equipment, supplies and storage space on all floors and service areas were determined.
- 2.7 Flow of patients through outpatient clinics, emergency room and from these areas to the service departments were outlined in writing and circulated to departmental supervisors.
- 2.8 Appointment, admission and discharge as well as visitors flow procedures were designed.
- 2.9 Sign posting throughout the medical center, including external direction signs, were finalized and handed over to the contractor for implementation.
- 2.10 Fire and safety programs and procedures were prepared and hospital staff given orientation courses.
- 2.11 A program of landscaping and gardening was started.

3.0 Late Action Phase - October 1978

- 3.1 Commissioning of scientific equipment was commenced and all deficiencies were recorded. Missing or incomplete equipment items were ordered.
- 3.2 Deficiencies in all service areas and in the wards were corrected by adding shelving, storage areas, cupboards, office equipment and laboratory benches.
- 3.3 Supplies levels for service areas were determined and provided in their respective areas.
- 3.4 The operating theaters were completed as far as equipment and modifications were concerned. Use of theaters, the necessary supplies and flow of patients and staff were determined with cognizant departmental supervisors.

- 3.5 A system for the collection and transport of dirty linen as well as the distribution of clean linen was determined.
- 3.6 Flow of medications from the pharmacy to the wards was outlined.
- 3.7 Need for linen stocks in the various wards was determined and a 'topping-up' system worked out.
- 3.8 Directional signs were finalized.
- 3.9 Space for overnight stay residents and senior residents was allocated.
- 3.10 Hospital staff were encouraged to visit the new center and become familiarized with their new work sections.

4.0 Final Action Phase - November and December 1978

- 4.1 Hospital Administration moved into its offices November 5th.
- 4.2 Final arrangements of service departments were completed and they moved into the Center during the period November 6 thru November 20th.
- 4.3 Based on a detailed schedule the out-patient clinics moved to their new facilities during the period November 20th thru the 25th.
- 4.4 Final preparation of the wards and nursing units was completed including blinds, linen and supplies.
- 4.5 A new medical center telephone directory was prepared and distributed throughout the new facility.
- 4.6 Preparations were started for the inauguration ceremony.
- 4.7 A detailed plan for the move of inpatients was put into operation on December 6, 1978 when 350 inpatients, the emergency room, intensive care unit and operating theaters, along with their staff and equipment, moved into the new medical center. This move was accomplished within three and one-half hours. At that point the new medical center commenced total hospital operations.
- 4.8 Reviewing hospital operations following occupancy of the new medical center, new systems were introduced including an elevator alarm system; modifications to the key control system were also made.

- 4.9 New substores for dry food storage, stationary, surgical dressings, domestic services materials, crockery and hardware were established and a new system of requisitioning from these substores and from the central stores were established.
- 4.I0 Areas vacated in the old hospital complex were inventoried and locked up awaiting commencement of renovation scheduled to begin January 1979.
- 4.II The official inauguration of the new hospital by H.H. Sheikh Issa Al-Khalifa on Bahrain's National Day signalled the close of this phase of activity. Photographs of the inauguration may be seen in appendix I.

B. PROBLEMS ENCOUNTERED DURING THE REPORT PERIOD

5.0 Deficiencies of Air Handling and Air Conditioning Systems

A six week study by two consultant engineers confirmed suspicions that air cooling, air handling and exhaust systems are not adequate to meet operational requirements. The study conducted reveals the need to replace existing fan/coil units, air handling units, motors, fans and starters and that existing filters require substantial modification. The cost estimate for the correction of these deficiencies is estimated to be 150,000 B.D. The system is now not operational and is expected to be inoperative for an additional six to eight weeks. Absence of air conditioning is causing loss of enzymes and other solutions in the laboratory and is overtaxing radiology equipment due to continuous high operating temperatures.

5.I Chilled Water Plant Capacity

Just prior to the move to the new medical center operational efforts to cool the new building met with continued resistance. The source of the difficulty was traced to inadequacy of the cooling towers and insufficient number of chillers. A large cooling tower is now on order as is a fourth chiller.

It is essential that the cooling tower and fourth chiller be installed not later than April 1, 1979. In the event they are not installed, hospital operations will be extremely difficult if not impossible to continue.

5.2 Water Treatment

Resulting from shifting priorities within the Bahrain Government, funds originally allocated to development of a desalinizing plant were switched to the development of an electrical power station. As a consequence of this there is a serious shortage of treated water throughout the medical center. Especially affected areas are steam boilers, hot water systems, kitchen, C.S.S.D., T.S.S.U. and cooling towers. The build up of scale in the water distribution system is a serious consequence of lack of treated water. The air conditioning system is now inoperative resulting from the build up of scale on both the cooling towers and chillers. The seriousness of uncontrolled water treatment is of sufficient magnitude to consider it a critical item for action.

5.3 Spare Parts and Maintenance Supplies

The necessity for an early procurement of an adequate stock of spare parts and maintenance supplies was pointed out in May of 1978 and again during August of 1978. During those time periods 250,000 B.D. was requested for shelf stock and an additional 250,000 B.C. for consumable items. To date there is virtually no progress toward obtaining these stocks. It appears that about 5 % of requirements are reportedly available. Procurement of these items, by present standards, may take nine to twelve months.

The medical center has therefore been started up and patients moved in without sufficient maintenance spare parts and supplies. Operationally this means that, in addition to insufficient technical manpower, that built-in systems and service equipment can breakdown and remain out of order for extended periods of time.

- 5.4 During June 1978 the possible inadequacy of the brakish water supply was pointed out. Today that possibility has become a reality dramatized by the inability to flush W.C.'s etc. The cooling towers for the air conditioning during the summer months will alone consume about 150,000 gallons of brakish water daily. This amount of water is practically seven times as much as was used on a monthly basis in the overall operation of the old hospital. It is now clear that water engineering specifications were inaccurate and that the existing six inch supply line cannot cope with the increase in water demand in the new medical center. Moreover, a hospital should be in possession of a back-up water supply.

A possible solution to this shortage is that of drilling a well of sufficient depth as to preclude causing ground shifts. Whatever solution is selected action is urgently required prior to the arrival of summer and opening the remaining 200 beds.

5.5 Technical Manpower

The only bright spot on the engineering scene is the recent recruitment of engineering and technical manpower. Aside from a hospital plant engineer who was to be assisted by specialized engineers in refrigeration, electricity and mechanics, four shift engineers for provision of 24 hour plant operation, forty plant technicians and seventy skilled electro-mechanics and fitters were deemed to be required to keep the hospital systems functioning. At this time the bulk of this staff has been recruited, though shortages, particularly in the technician grades, still exist. Although the bulk of staff is available their efficiency is severely compromised by lack of spare parts and consumables as noted above. There are further complications due to poor building design in terms of access to air handling units, steam pipes and the like. Work areas in numerous strategic areas constitute a maze of steam pipes, water pipes and the like. If we had ten workers who were about six inches tall I believe the system could be adequately maintained and repaired.

5.6 Resolution of the PNO's Status

Resulting from a continuing barrage of complaints raised by members of hospital and medical administration, the Minister of Health, as Chairman of the Governing Body, agreed in the December 29th Governing Body meeting to the release of the PNO. The terms and conditions are that she be requested to resign and remain in-post throughout the three month notification period; that she be encouraged to use up her accrued annual leave during her final month's service. Accordingly, I have requested the Ministry located Director of Nursing to notify the PNO of the Governing Body's decision.

A newly arrived Deputy Principal Nursing Officer from the U.K. is thus far believed to represent the best replacement possibility following a substantial period in an acting capacity.

5.7 MEDICAL CENTER MANPOWER

During early December 1978, the Ministry's Director of Nursing and I visited Manila for purposes of recruiting our 1978 nurse allocation. The trip was successful. Seventy-two staff nurses were recruited along with twelve highly trained technicians for our laboratory, radiology and physiotherapy services. These staff are expected to arrive in Bahrain toward the end of January 1979. Availability of these trained nurses will permit us to operate our C.C.U. and remainder of our I.C.U. There are no Bahrainis who are trained in either of the above specialty areas. Availability of the Filipino technicians will allow us to utilize our angiography and encephalography equipment.

While training of Bahraini nurses has been under active discussion the unavailability of surplus nurses to either be sent away for training, or be pulled off their usual duty assignments for local, on-site training, precluded favorable action. In the event we are successful in our current budget negotiations and are able to increase our nurse allocation for 1979 to 270 staff, we will be able to commence on-site training of Bahraini nurses for these special care areas. In the event our budget negotiations are not successful we will be forced to continue utilizing expatriot staff.

Successful budget negotiations with both the Civil Service Bureau and Ministry of Finance are the key to this issue. As the Bahrain Government is on a two year budget cycle, new personnel requests for 1979 were made by the Ministry located Director of Finance and Personnel during 1977. He requested only a 10% increase over 1978 in spite of there being a 36% increase in size of the new medical center. In the event appropriate and needed staffing levels are not approved we will be unable to open the remaining 200 beds, or train a Bahraini capability to man these complex care areas and will be wed to the discontinuity which is part and parcel of heavy reliance on expatriot staff.

C. OBJECTIVES PLANNED FOR THE UPCOMING REPORT PERIOD

- 6.0 Implementation of an Accreditation Program:
Proposed Objectives
- 6.1 That Salmaniya Medical Center will move in the direction of accreditation.
- 6.2 That all departments of the Medical Center will move in the direction of accreditation.
- 6.3 That at least 3 of the 12 clinical departments will achieve 20% compliance rate with reference to accreditation standards by the close of 1979.
- 6.4 That of the 13 Administrative departments, one third will achieve 90% compliance, one third 60% compliance and the remaining one third will achieve 30% compliance with reference to accreditation standards by the end of 1979.
- 6.5 That mode of operation will entail preparation of a document, within the first month, setting the stage for an accreditation manual applicable to Bahrain by modifying the manual of the Joint Commission on Accreditation of Hospitals (JCAH) which is used in the USA.
- 6.6 A hospital management reporting system will be devised and ready in approximately three months to reflect the status of performance as a guideline to assess any savings in the cost of operations that may ensue.



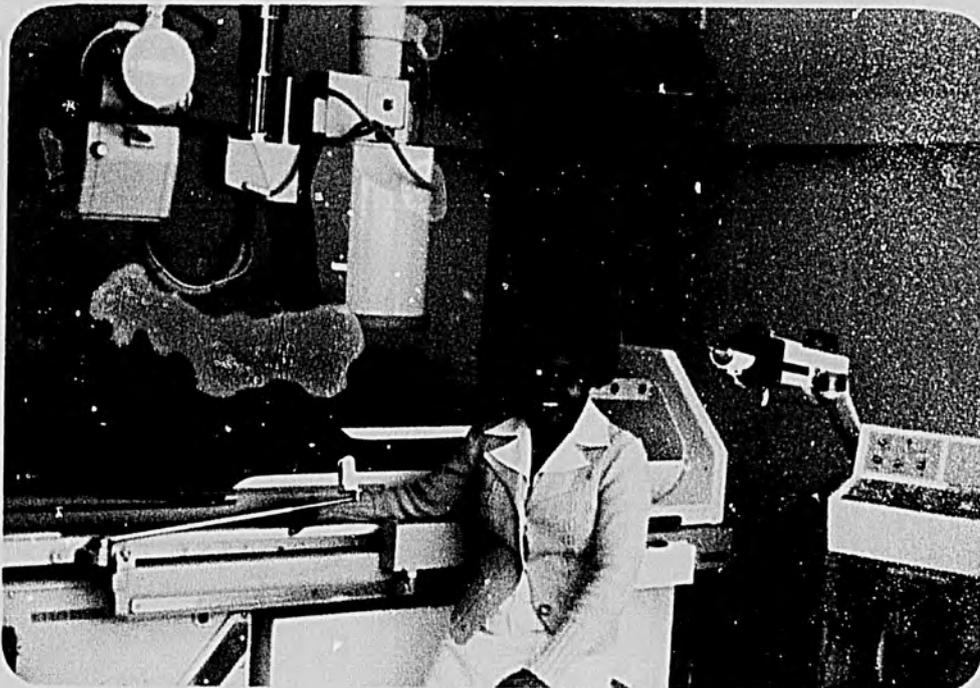
Dr. Adel Gashan, Director of I.C.U., examining a critical patient in the new unit.



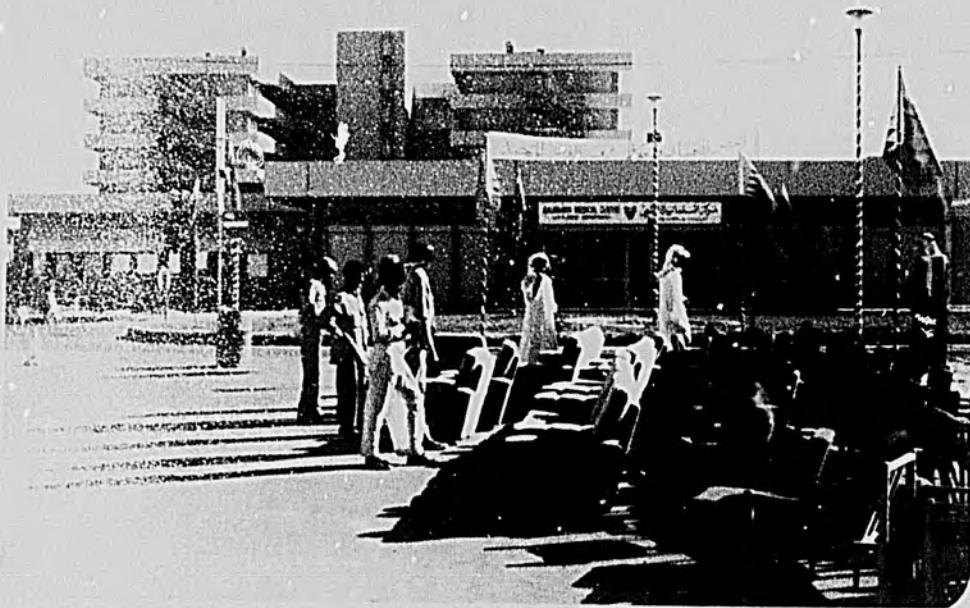
The head nurse of I.C.U. is monitoring patient's vital signs at the central console. Once a parameter is exceeded a 10 second E.K.G. is automatically printed out.



Mr. David Glennon, AID's Inservice Training Coordinator demonstrating new kidney dialysis equipment.



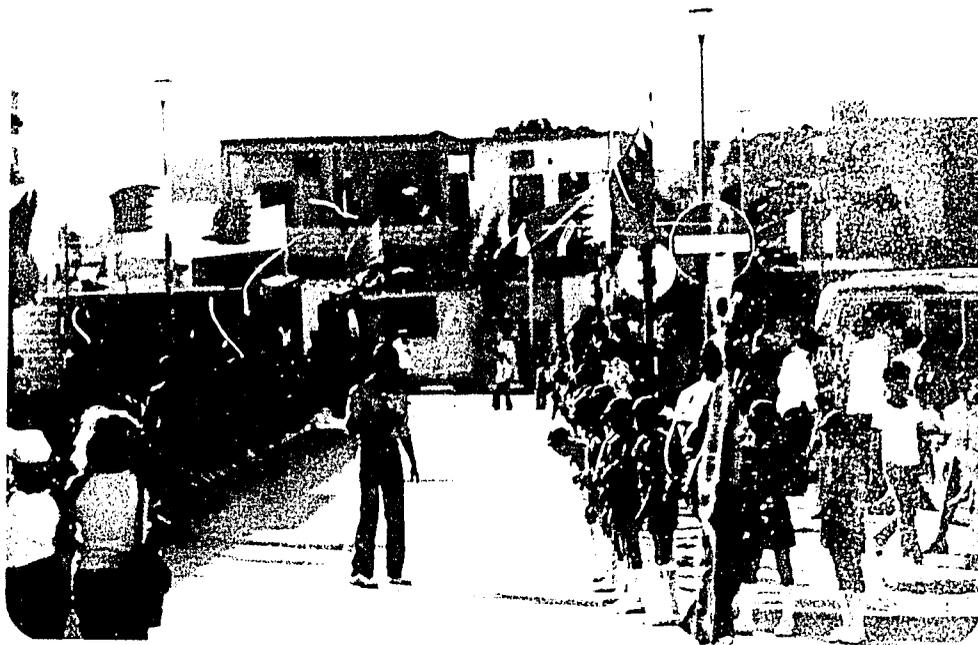
Newly installed x-ray equipment. Several of these equipment items are computer operated.



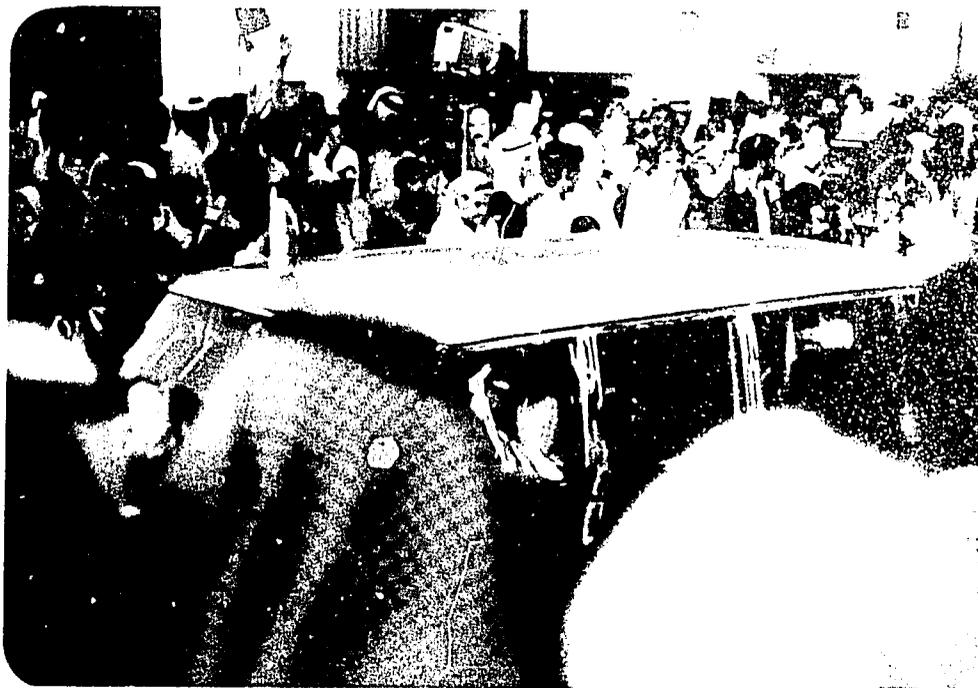
Preparations for the Grand Opening commenced early on December 16th, Bahrain's National Day.



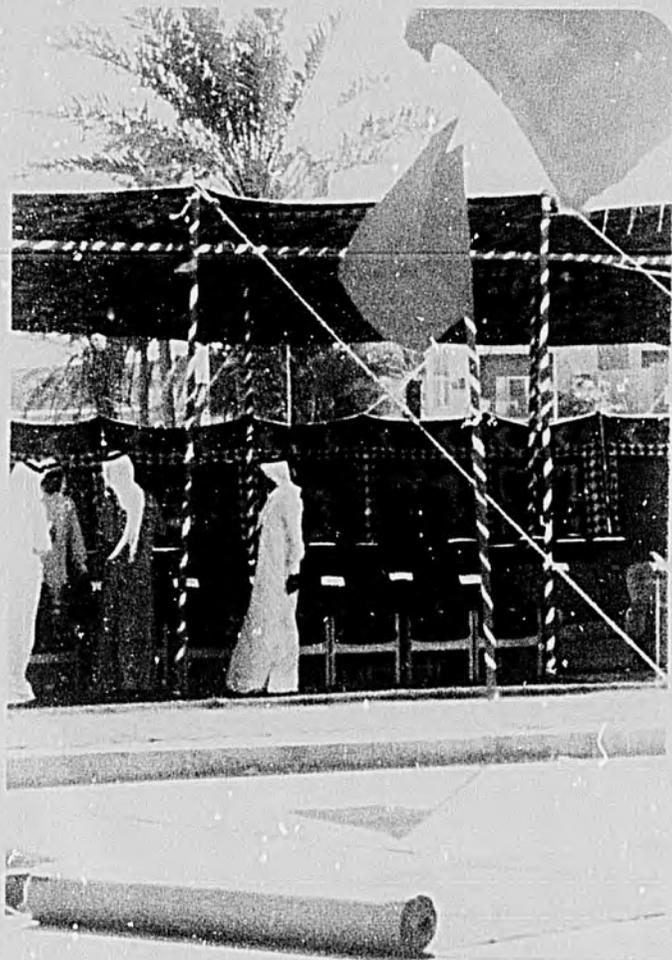
H.E. Dr. Ali Fakhro, Minister of Health and H.E. Tariq Al-Moyed, Minister of Information, visit inauguration site.



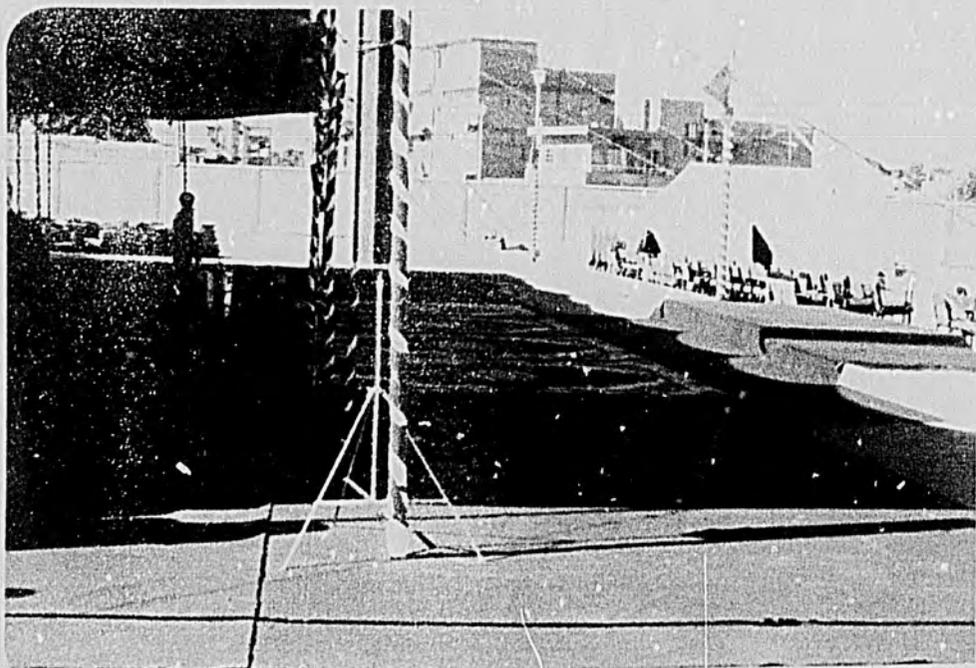
Bahraini Boy Scouts awaiting the arrival of the Amir.



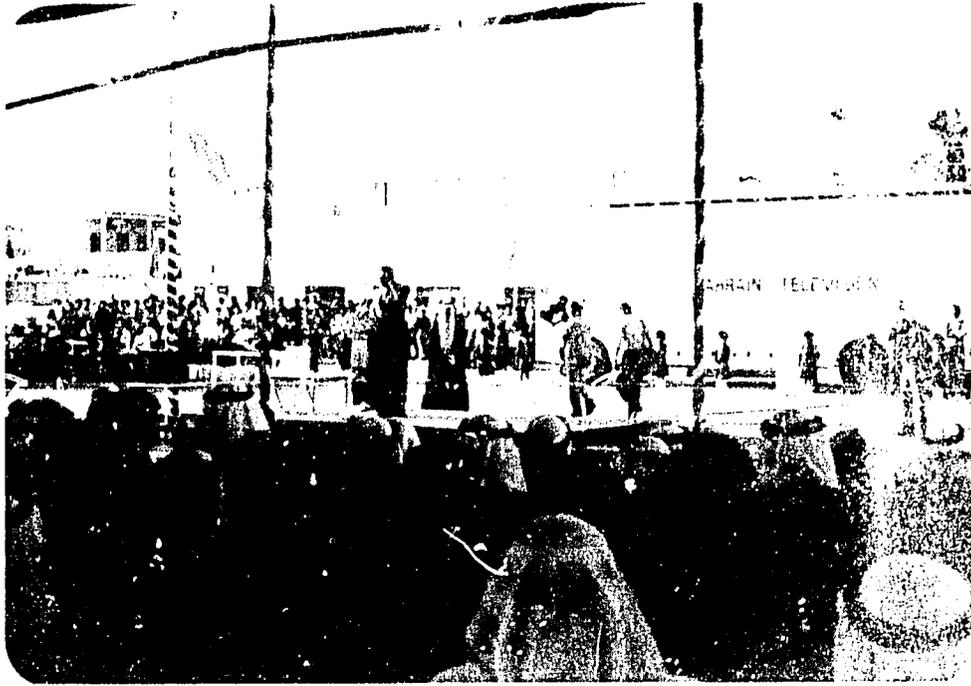
The Amir, Sheikh Issa Al-Khalifa, arrives at Salmaniya Medical Center for the inauguration ceremony.



Preparations of the inauguration site. The red carpet is rolled out for the Amir.



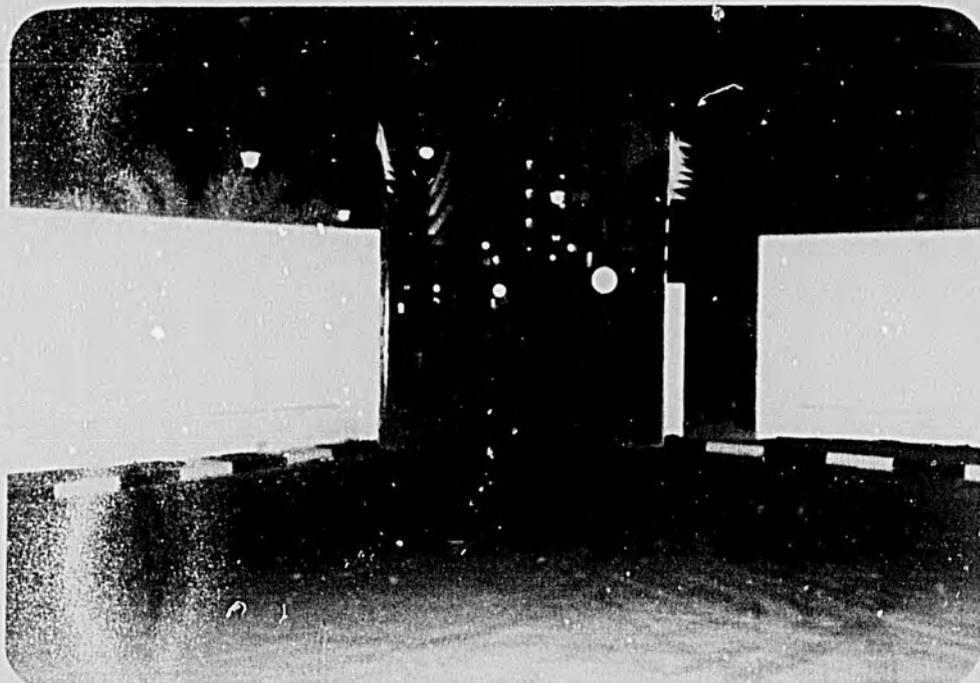
As is customary for an occasion of this nature, Persian carpets cover the seating area.



H.E. Dr. Ali Fakhro presents the inaugural address.



Sheik Issa Al-Khalifa unveils the plaque commemorating his opening of the New Medical Center.



Night view of Salmaniya Medical Center from the main entrance



The inaugural ceremony completed, and with visitors departure, the medical center returns to a state of quiet.