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MILITARY TRANSFER OF TECHNOLOGY

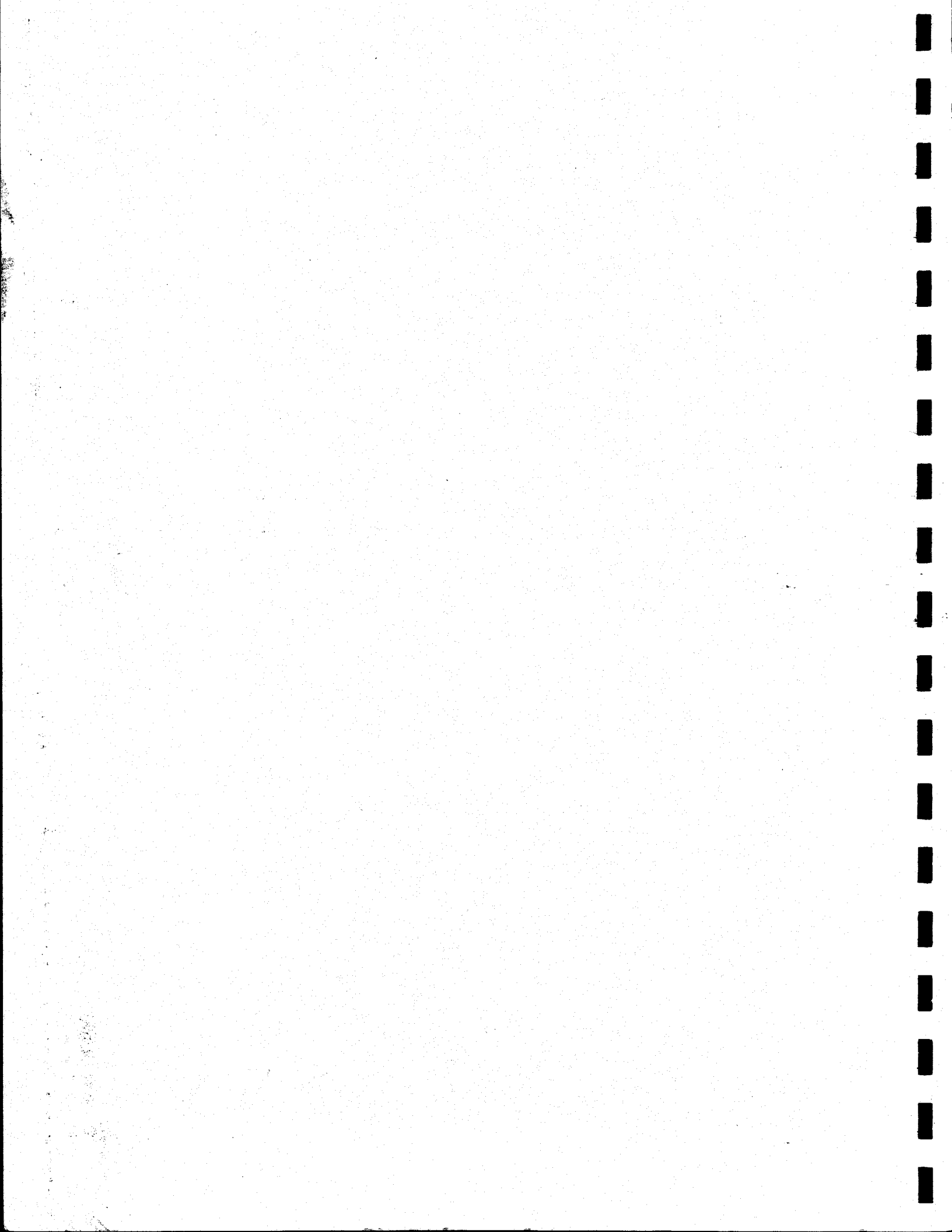
INTERNATIONAL
TECHNO-ECONOMIC TRANSFERS
VIA
MILITARY BY-PRODUCTS AND INITIATIVE
BASED ON CASES FROM JAPAN
AND OTHER PACIFIC COUNTRIES

by

Daniel L. Spencer

7H2021

Chairman
Department of Economics
Howard University
Washington, D. C.



by the Government of the United States of any of the obligations assumed under this Arrangement, exert its best effort to approve, under the applicable laws and regulations of Japan, such technical assistance agreements, so that the work can be performed without delay.

It is understood that in case licenses and technical assistance agreements in connection with performance of this Arrangement are submitted to the Government of Japan for approval, the Government of Japan will, under the applicable laws and regulations of Japan, render a prompt decision in one way or another.

(6) Install in the F2V airplanes which have been completed and accepted by the Government of Japan such retrofit kits as may be furnished by the Government of the United States.

(7) In accordance with the laws and regulations of Japan, take appropriate steps, when necessary, to make the funds available from private or governmental sources to install the machine tools and production equipment required for the performance of this Arrangement and to otherwise permit the performance of this Arrangement by the Government of Japan.

(3) Furnish from time to time such progress reports relative to the work called for under this Arrangement as may be requested in writing by the United States Plant Representative.

Article IV

It is understood that the U.S.-Japan Cost Summary, attached hereto, is the broad scope within which each of the two Govern-

ments will take necessary steps to share the cost needed for the production of P2V aircraft.

Article V

The two Governments shall exert their best efforts to make available to the Japan Maritime Self Defense Force the airplanes and related spare parts produced under this Arrangement in accordance with the following cumulative schedule:

By March 31, 1960	6 Airplanes
By March 31, 1961	18 Airplanes
By March 31, 1962	30 Airplanes
By March 31, 1963	42 Airplanes

Article VI

All items preserved and packaged in Japan for the support of airplanes produced under this Arrangement will be processed in accordance with "Proposed Army Forces Far East Specification For Preservation, Packaging and Packing" except that specifications referred to therein shall be the latest revision in effect at the time this Arrangement is executed. The United States Plant Representative will be consulted upon the type of packaging as specified therein to be used for the various parts, units, components and materials involved.

Article VII

(1) All spare parts will be physically identified in accordance with specification MIL-M-7911. All Lockheed designed parts manufactured in Japan will be so part-numbered to conform to the

corresponding part numbers of the Lockheed Aircraft Corporation. All military parts and equipment manufactured in Japan will be so part-numbered as to conform to the Military Part or Type number (AN MS etc.). All Lockheed designed parts will have the Japanese Prime Contractor's letters (KAC as example) prefixed in front of the part numbers.

(2) Interior packages and shipping containers shall be marked in accordance with specification MIL STD 129.

Article VIII

(1) The Government of Japan shall make no changes in the airplanes being produced under this Arrangement without the written consent of the Contracting Officer. However, materials, parts, components and equipment furnished by the Government of the United States which are different from the airplane specifications cited under Article III, paragraph (2) shall be incorporated as so furnished into the airplanes to be assembled with only minimum changes as are required by such incorporation of the aforesaid materials, parts, components and equipment, all without specific written consent of the Contracting Officer. Furthermore, all production facility changes to Lockheed Aircraft Corporation drawings that do not affect specification changes as cited under Article III, paragraph (2) of this Arrangement, such as drawing errors and changes required for manufacturing equipment compatibility as exists in Japan, may be made under the Technical Assistance approval of Lockheed Aircraft Services-Overseas, Incorporated, without consent of the Con-

tracting Officer.

(2) For the purpose of revising the specifications referred to in Article III, paragraph (2) so that such specifications will accurately reflect the effect of any specification changes in the construction, design or configuration of the airplanes, components and equipment to be produced or furnished under this Arrangement, the Government of Japan will furnish the United States Plant Representative every 90 days - or as otherwise agreed to by the two Governments - with reports, in triplicate, on all deviations from the specifications affecting the airplanes, components and equipment to be produced or furnished under this Arrangement, which deviations have been made subsequent to the specification change last reported. All the specification changes reported in accordance with this paragraph shall constitute amendments to the model specifications cited in Article III, paragraph (2).

(3) The Government of Japan shall take necessary steps for such production engineering, tooling control and maintenance, and such tooling checks as will insure the greatest practicable interchangeability among the airplanes and spares being produced in the United States of America and Japan.

Article IX

All data and services in connection with the technical assistance to be provided to the Kawasaki Aircraft Company, Limited, by the Government of the United States for the performance of this Arrangement shall be delivered or furnished in accordance with the terms of such agreements as may be entered into between

the Lockheed Aircraft Services-Overseas, Incorporated, and the Kawasaki Aircraft Company, Limited, and approved by the two Governments, and in accordance with the terms of such agreements as may be entered into between the Government of the United States and the Lockheed Aircraft Services-Overseas, Incorporated. Such of the data as stated above as are classified by the Government of the United States as "Secret" or "Confidential" shall, however, be delivered or furnished by the Government of the United States through the Government of Japan, so that the Government of Japan may take the security measures as provided for in Article XIV, paragraph (1) hereof.

Article X

(1) The United States Plant Representative, Contracting Officer, Inspectors, Contract Technicians and miscellaneous administrative and clerical personnel may be stationed at the place of production of airplanes, and the accommodations necessary for the performance of their duties shall be provided without expense to the Government of the United States.

(2) The term "accommodations" means, for the purpose of the preceding paragraph, office space, utilities, telephones, furniture and equipment at the place of production.

Article XI

(1) In performance of this Arrangement the Government of the United States shall bear all the costs of:

- a. all technical data and assistance called for in any technical assistance agreements entered into

between the Kawasaki Aircraft Company, Limited, and the Lockheed Aircraft Services-Overseas, Incorporated, which have been approved by the two Governments; and

- b. the Contract Technicians furnished in accordance with this Arrangement.

(2) Any other costs arising from the technical assistance agreements mentioned in this Article for the purpose of carrying out this Arrangement will be without expense to the Government of the United States.

Article XII

The Contracting Officer may at any time, by a written instruction through and with the consent of the Government of Japan, make changes, within the general scope of this Arrangement, in the specifications, provided that the Contracting Officer determines that such changes will facilitate production, improve parts interchangeability or operational characteristics, or are necessary to conform to changes in the manufacture of the parts furnished.

Article XIII

(1) The Government of the United States shall attach to the shipping documents a certificate issued by an authorized inspector of the Government of the United States for all supplies to be shipped to Japan.

(2) Adequate inspection and test of all supplies to insure conformity with drawings, designs and specifications of the contract shall be effected by the Government of Japan.

(3) The Government of Japan shall provide and maintain an inspection system acceptable to the two Governments covering the work called for under this Arrangement, and shall maintain such records of all inspection work for such period of time as is the normal practice of the Government of Japan.

(4) The Government of Japan will furnish to the United States Representative a certificate or certificates stating that the inspection has been made and that all supplies, services or materials covered by such certificates meet all requirements of the drawings, designs, specifications and quantities provided for in this Arrangement.

(5) The Government of the United States shall not, because of such inspection surveillance as is exercised by its personnel pursuant to this Article, assume any liability to any person or entity for any damage that may result from defects in the accepted articles.

(6) For the purpose of this Article, the term "supplies" includes, without limitation, materials, components, intermediate assemblies and end products.

Article XIV

(1) With respect to any materials, documents, drawings or specifications furnished under this Arrangement, security measures shall be taken in accordance with the Mutual Defense Assistance

Agreement between the United States of America and Japan, signed at Tokyo on March 8, 1954.

(2) The Government of Japan will incorporate in the contracts necessary provisions for such plant protection in all plants engaged in the performance of the work under this Arrangement as will insure the satisfactory completion of the said work.

(3) The furnishing of the materials, parts, components, equipment and data by the Government of the United States under this Arrangement does not constitute approval or permission for the Government of Japan or any of its contractors to reproduce such materials, parts, components, equipment or data. The Government of Japan agrees that it will not reproduce such materials, parts, components, equipment or data for any purpose not expressly authorized in writing by the owner of the property right to the product or data, and it further agrees that it will incorporate in the contracts under this Arrangement such provisions as may be necessary to prevent its contractors from reproducing such materials, parts, components, equipment or data for any purpose not expressly authorized in writing by the owner of the property right to the product or data.

(4) The restrictions contained in paragraph (3) above shall be applicable to all materials, parts, components, equipment and data whether or not Letters Patent or Copyright, as the case may be, have been applied for or issued.

Article XV

The Government of Japan agrees to furnish to the Contracting

Officer such information as may be requested regarding the placement or proposed placement by the Government of Japan of sub-contracts and purchase orders, with a view to facilitating early consultation between the two Governments on any questions respecting the reliability, potential efficiency or productivity of any subcontractor concerned.

Article XVI

Any technical or administrative problems in connection with the performance of the production of airplanes under this Arrangement which cannot be resolved by the respective United States and Japanese Plant Representatives shall be referred to an Action Committee for settlement. Such Committee shall be composed of representatives of the two Governments and empowered to make decisions and secure the enforcement thereof. Major disputes arising out of this Arrangement will be referred to the Action Committee for recommendations to the respective Governments.

Article XVII

This Arrangement shall come into force on the date of signature and remain in force until:

- (1) Terminated by mutual agreement between the two Governments.
- (2) Termination of the Mutual Defense Assistance Agreement between the United States of America and Japan.
- (3) Terminated by either Government in the event the other Government refuses or fails to comply with the terms of

this Arrangement to the extent that completion of the program under the Arrangement is jeopardized.

(4) War, active hostilities or other major calamity makes it impossible or impractical to continue with the performance of this Arrangement.

Article XVIII

(1) Each Government shall reserve its right of claim against the other Government in case this Arrangement is terminated pursuant to Article XVII, paragraph (3) hereof.

(2) In the event this Arrangement is terminated by the Government of the United States pursuant to Article XVII, paragraph (3) hereof, all materials - except those incorporated in completed airplanes - furnished by the Government of the United States under this Arrangement shall be regarded as "equipment and materials furnished under end item programs as are no longer required in the furtherance of the Mutual Defense Assistance Agreement" within the meaning of "Arrangements for Return of Equipment under Article I of the Mutual Defense Assistance Agreement between the United States of America and Japan", and shall be disposed of as prescribed by the said Arrangements.

(3) In the event this Arrangement is terminated for the reasons mentioned in Article XVII, paragraphs (1), (2) and (4) hereof, the disposition of all the materials set forth in Article II, paragraph (1) hereof - except those incorporated in the completed airplanes - will be made by mutual agreement pursuant to the provisions of the Mutual Defense Assistance Agreement between

the United States of America and Japan.

IN WITNESS WHEREOF the representatives of the two Governments, duly authorized for the purpose, have signed this Arrangement.

DONE in duplicate, in the English and Japanese languages, both equally authentic, at Tokyo, this twenty-fifth day of January, one thousand nine hundred and fifty-eight.

For the Government of the
United States of America

For the Government of Japan

U.S. - JAPAN COST SUMMARY (P2V PRODUCTION IN JAPAN)

42 A/C: 1 A/C per month

		U. S. A.		JAPAN			TOTAL	
ITEM		\$	¥1,000	ITEM	\$	¥1,000	\$	¥1,000
F I X E D C O S T	Mfg Data Tech Process For Foreign Procd Tech Ass't U.S. Tooling Crating Rebuilding GC & A Fixed Fee	1,100,000 5,000,000 611,000 200,000 1,989,000	396,000 1,800,000 219,960 72,000 716,040	Tooling Preplanning	5,791,886 61,539	2,085,079 22,154		
	Total	8,900,000	3,204,000	Total	5,853,425	2,107,233	14,753,425	5,311,233
P R O D U C T I O N S T	Material: U.S. Gov't L.A.C. LASO-Direct (Crating & Stateside Freight included)	15,357,480 16,939,834 2,020,078	5,528,693 6,098,340 727,228	Material Flight Cost Labor Cost Other Expenses Royalty GC & A Profit Freight	23,392,736 208,000 4,436,761 2,415,339 1,470,000 3,825,347 478,000	8,421,385 74,592 1,597,234 869,522 529,200 1,377,125 172,080		
	Total	34,317,392	12,354,261	Total	36,226,183	13,041,138	70,543,575	25,395,399
	Grand Total	43,217,392	15,558,261	Grand Total	42,079,608	15,146,371	85,297,000	30,706,632
Unit Price Ratio	With 20% spares W/O spares	1,028,986 857,488	370,435 308,696		1,001,895 834,912	360,676 300,563	2,030,881 1,692,400	731,111 609,259
		50.67%		49.33%			100%	

Appendix XV

REPORT OF A SPECIAL ORDNANCE LIAISON VISIT TO
MAAG, REPUBLIC OF CHINA,
September - October 1961

1. Country Visited and Dates

Republic of China during period 14 September - 5 October
1961.

2. Purpose of Visit

a. To assist and advise rebuild facility on procedures
used in tire rebuild.

b. Assistance was requested by Chief, MAAG-Republic of
China.

c. Mr. Delbert J. Bundy, DAC, Rubber Products Inspector
Foreman conducted the visit.

3. Observations

a. Installations and Activities Visited

(1) MAAG-Republic of China

Ordnance Section, MAAG-Republic of China.

(2) Chinese Army-Grand Republic China (CA-GRC)

(a) Automotive Base Depot.

(b) Tire Rebuild Shop.

b. Personnel Contacted

(1) MAAG-Republic of China

Col. W. P. Register	Chief, Ordnance Staff Advisor
Lt. Col. G. J. Harris	Ordnance Supply Advisor
Major W. W. Kinkaid	Ordnance Maintenance Advisor
Major J. M. Beale	Chief, Taipei Ordnance Sub- Office (Senior Advisor, Automotive Base Depot)
Major P. C. Ward	Supply & Maintenance Advisor (Taipei Ordnance Sub-Office)

Major C. E. Allen	Coordinator (Taipei Ordnance Sub-Office)
Capt. O. D. Parker	Maintenance Advisor (Taipei Ordnance Sub-Office)
CWO D. S. Black	Supply Advisor (Taipei Ordnance Sub-Office)
M/Sgt (E-7) J. S. Mersom	Supply Advisor (Taipei Ordnance Sub-Office)

(2) CA-GRC

Col. Y. Lay	CO, Automotive Base Depot
Col. L. Sun	Deputy CO, Automotive Base Depot
Lt. Col. C. Jung	Liaison Officer, Automotive Base Depot
Major H. L. Chang	CO, Tire Rebuild Shop

c. Definitions

Definitions and technical terms used in this report are contained in TM 9-1871 (Repair and Rebuild of Pneumatic Tires and Tubes) dated November, 1956.

d. General

The Tire Rebuild Shop is located at the Automotive Base Depot, Taipei, Formosa. Rebuild of tires and tubes by this facility is for direct support of vehicle rebuild and for depot stocks. This facility is located in two permanent concrete type buildings. Equipment used is American made and is in very good condition. Shop layout is adequate. Shop is staffed by Chinese Army personnel, who are very energetic and conscientious in their work. It is the opinion of the liaison representative that many of the personnel assigned to this facility were performing their duties in a commendable manner consistent with their knowledge of tire rebuild techniques, but require additional training in the proper application of tire rebuild methods and operation of equipment.

e. End Item Reject Rate

At beginning of visit reject rate of tires rebuilt was averaging approximately 17%, through advice, recommendation and assistance furnished, this rate was reduced to one and one half percent (1.5%) at end of visit. Recommendations and assistance furnished by liaison representative and the outstanding cooperation of the Chinese personnel in acting upon advice furnished towards improving the operations are contained in the succeeding portions of this report. These actions were wholly or in part responsible for reducing the reject rate. A two (2) percent rejection rate in a facility of this type is considered an acceptable quality level.

f. Tire Rebuild

In the course of advising and instructing in the proper methods of tire repair the following problem areas were reviewed.

(1) Standard Operating Procedure

No written SOP was available. During visit, liaison representative prepared a SOP outlining process, methods, techniques, standards and procedures to be followed. This SOP was approved and was in process of being translated into Chinese for use by operating personnel.

(2) Initial Inspection

Initial inspection performed did not provide for complete inspection to determine degree of repairs necessary to restore to servicable condition. Personnel were instructed in proper methods of inspection and marking. Marking codes provide for identification and segregation as regards full capping, retread, section repair, spot repair and nail hole repair. One set of gauges for measuring tread depth was locally fabricated upon recommendation and design of liaison representative and are primarily used in determining whether or not tire should be recapped. Personnel were trained in use of these gauges.

(3) Buffing

Buffing equipment and method employed were improper. Buffing rasps were being used in operation other than what they were designed for. These practices contributed to faulty carcasses being processed. Personnel were instructed in the proper use of equipment and method application.

(4) Re-Inspection

After buffing operations tires should be re-inspected to determine whether or not initial inspection revealed all defects. This inspection was not being accomplished. Upon recommendation a re-inspection station was established.

(5) Drying Room

Tires were vertically stacked in the drying room after buffing operations. Drying room did not permit controlled heat circulation and exhaust of humidity. The two (2) drying rooms contained one (1) door each, this impaired controlled rotation of tires being dried. Personnel were advised to drill holes in the steel flooring in order to permit heat circulation from the steam pipes that are located beneath the floor and to stack the tires horizontally to permit circulation throughout the tires and the room. To determine humidity, thermometers, wet and dry

were installed to indicate when the exhaust blowers should be used to exhaust the humidity. To control rotation of tires being dried, it was suggested that an additional door be installed in each drying room to permit controlled flow of tires in and out of the room (first in-first out system), also tires should be kept in the drying room at least 72 hours under constant control temperature to insure proper and complete drying.

(6) Section Repair

Excessive cut down of tire injuries was being performed, resulting in good cords being removed along with damaged cords. Tires were cut from outside only. Wire wheel only was being used on flexible buffers causing tire cords to be burnt. Burr rasps which were available in supply but not used were obtained and put to use in conjunction with the wire wheels. These improper shop practices were pointed out to operating personnel followed-up by instruction and demonstration of proper methods to be employed.

(7) Cementing

Cement was applied to carcass in a brushing manner rather than by stippling. Application of cement was uneven. Naptha gasoline was being used for cleaning prior to cementing rather than by compressed air. Room temperature and cement drying time was not maintained causing improper adhesion of camelback (rubber) to tire carcass during molding operation. Wet and dry thermometers were installed and at completion of application of cement to the tire carcass, drying time was recorded on each tire.

(8) Recap Build-Up

Camelback (rubber) application was improper wherein it was not being centered on tire carcass and joining angle was not cut to prescribed 45° angle. Tire, build-up (thickness of rubber applied) and curing time required in molding operation not recorded on each tire. These malpractices were corrected.

(9) Mold Section

Improper use of spacers and curing rims in the molds was being practiced. Routine shop maintenance of molding equipment was not being accomplished. Proper use of spacer and curing rims was explained and malpractices corrected. Molding equipment requiring maintenance was serviced and shop maintenance schedules were established.

(10) Final Inspection

Only external inspection of tires was performed. Defective tires were not analyzed to determine cause of defect in order that responsible section be notified to affect corrective measures. Liaison representative thoroughly explained by demonstration final inspection procedures and causes for various defects and sections responsible for the cause.

4. Assistance Furnished by Team During Visit

Liaison representative instructed and advised tire rebuild personnel in all phases of tire repair and rebuild operations. Details of this are contained throughout the report.

5. Corrective Action on Recommendations and Problem Areas Reported on Previous Visit

Not previously reported, this report reflects results of special visit regarding assistance to tire rebuild facility requested by MAAG-Republic of China.

6. Conclusions

a. Tire rebuild reject rate was reduced from 17% to 1.5% during course of visit by liaison representative.

b. Tire rebuild personnel require additional training in rebuild methods and operation of equipment.

c. Tire rebuild personnel were very cooperative in immediately acting upon advice furnished by liaison representative towards improving their operation and standards of rebuild.

d. Rebuild quality of tires has been improved.

7. Recommendations - MAAG-Republic of China

a. That an American tire rebuild specialist be permanently assigned to the Tire Rebuild Facility to render necessary assistance as required.

b. That the tire rebuild SOP be followed by tire shop personnel and that the SOP be reviewed at least once a year by a qualified rubber product specialist to maintain current tire rebuild methods and practices.

8. Action by Team

a. During Visit

(1) Assisted tire rebuild personnel in improving tire rebuild quality and efficiency of operation.

(2) Advised and instructed by demonstration the proper methods and procedures applicable to tire rebuild.

b. After Return

Change to existing tire rebuild specifications as received by USALCJ will be made available to MAAG-Republic of China.

9. Exit Critiques

Matter contained in this report plus numerous minor items not included in this report was discussed with Senior Ordnance Advisor and staff, and Commanding Officer, Automotive Base Depot (CA-GRC) and staff. No discord was registered on items discussion during both critiques.

DELBERT J. BUNDY
Rubber Products Inspector Foreman

LIST OF ABBREVIATIONS

AFAK	(Armed Forces Assistance to Korea)
ASTM	(American Society for Testing Materials)
CONUS	(Continental United States)
DAC	(Department of Army Civilian)
DDEP	(Defense Development Exchange Program)
D.S.A.	(Defense Supply Agency)
ESS/LAB	(Labor Division of the Supreme Commander for the Allied Powers' Economic and Scientific Section)
FECOM	(Far Eastern Command)
FTO	(Foreign Technical Officer)
JDA	(Japanese Defense Agency)
JIS	(Japanese Industrial Standards)
JSDF	(Japanese Self Defense Forces)
MAAG	(Military Assistance Advisory Group)
MAP	(Military Assistance Program)
MAS	(Military Assistance Sales)
MCB	(Military Construction Bureau)
MDAP	(Mutual Defense Assistance Program)
MITI	(Ministry of International and Trade Industry)
NAEC	(Naval Air Engineering Center)
OJT	(On-the-job-training)
OSP-J	(Offshore Procurement-Japan)
PACOM	(Pacific Command)

R & D	(Research and Development)
ROK	(Republic of Korea)
SCAP	(Supreme Command for the Allied Powers)
TKS	(Tokyo Keiki Seisakusno or Tokyo Instrument Company)
USALCJ	(U.S. Army Logistic Center, Japan)
USARJ	(U.S. Army Japan)

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