APRIL, 1958 35c

FOREIGN SERVICE JOURNAL

The AMERICAN FOREIGN SERVICE PROTECTIVE ASSOCIATION

Copies of the Protective Association booklet "Group Insurance Program—June, 1957" are available at:

Protective Association office, 1908 G Street, N.W., Washington, D.C.
Foreign Service Lounge, 513, 801 - 19th Street, N.W., Washington, D.C.
Foreign Service Institute, Jefferson-Tyler Bldg., 1018 Wilson Blvd., Arlington, Va.
Administrative Offices at foreign posts.

This group insurance program may meet your needs. It is worth your study. The Protective Association plan is one of the most liberal of such plans in the United States. Members are receiving benefits in various claims at a present rate of more than two hundred thousand dollars annually.

Membership is increasing steadily and numbered 2,150 on March 1, 1958. The insurance year runs from March 1st to February 28th and accounts are kept on that basis.

In order to be eligible for membership in the Protective Association, applicants must be American citizens under 60 years of age, on the permanent payroll of the Department of State, and in one of the following categories of personnel:

Foreign Service Officers, Department of State.

Foreign Service Staff, Department of State.

Foreign Service Reserve Officers, Department of State, when on active service.

Permanent American employees of the Foreign Service of the Department of State.

ICA (Department of State) Officers, when on active service abroad.

Address applications and inquiries to:

THE AMERICAN FOREIGN SERVICE PROTECTIVE ASSOCIATION
c/o Department of State, Washington 25, D.C., or
1908 G Street, N.W., Washington 6, D.C.

Catalog NOW READY

A POSTCARD BRINGS IT TO YOU BY RETURN MAIL . . .

OR—PICK UP ONE AT YOUR ADMINISTRATIVE OFFICE . . .

OR *WE'RE ONLY 40 MINUTES (INCLUDING PARKING) FROM THE STATE DEPT. BLDG.— SCOOT ALONG EXPRESSWAY, 6 BLOCKS NORTH OF THE HUGE MONTGOMERY WARD BLDG.*

- ***EXTINCT MANDARIN CHINESE SILK*** . . . woven for us *only* and combined with 55% iron stamina Dacron*. Shimmering beauty . . . flawlessly machine tailored. To retail around $65 — at T. I. Swartz, 39.90. Tissue-weight; extraordinarily cool. (Of course if you're only happy with the most expensive—we have 12 styles of ***imported hand-woven shimmering Duppionni,*** finest on earth, at 69.90. But we urge you to refrain from the ***best*** if service is a factor.)

- ***CASHMERE WOMEN'S COATS*** . . . there are as many grades of cashmere as there is spinach. But to us cashmere means ***Cashmere from China,*** full stop & period! We consistently pass up more business than we take simply because there just isn't sufficient Chinese cashmere to go around—and (1) nobody can get his complete requirements . . . and (2) we won't ***touch*** the inferior and far more plentiful cashmere. Milium lined and made as fine as any coat can be. Our price 86.90.

- ***ZERO-WEIGHT 100% PURE*** Cashmere coats for women. Rarely associated with a retail price less than $139 to $159. Now being extensively delivered by us at an incredible 72.50.

- ***OUR TUXEDO*** (not something just as good) . . . the largest over-$80-selling tux in America. Chances are if you walk into any retail store in America and buy a tux from $80 to $90, you'll be the happy wearer of one of these. But you pay us 48.90.

- ***WASH N' WEAR*** . . . there'll be a big hallabaloo about Wash N' Wear summer tuxedo jackets in all the national magazines about May 1. The price will read "around $40." *Your price here*—$26.90.

W. H. SWARTZ DIVISION OF

T. I. SWARTZ AND SONS INC.

600 SOUTH PULASKI STREET

*Dupont Polyester Fibre.

FORMERLY 501 E. PRESTON ST., BALTIMORE 2

BALTIMORE 23, MARYLAND

Directions: Coming in on route 40 from Silver Spring, etc.? Drive in on Edmondson Ave., Franklin St. or Wilkens Ave. (as the case may be) to Pulaski St. stoplight and turn RIGHT onto Pulaski St. for 15 blocks (deadend) to our Parking Lot & new Building. • Coming in from Washington on the new Expressway? Turn LEFT at Monroe St. (traffic light, left turn island, etc.) proceed on Monroe for 4 blocks past Montgomery Ward Bldg. (on left) to Eagle St. for 2 blocks and LEFT again onto our Private Parking Lot next to our new Building.

The Editorial Board of the FOREIGN SERVICE JOURNAL will consider all articles submitted. If accepted, the author will be paid one cent a word at time of publication. Photographs accompanying articles will, if accepted, be purchased at one dollar each. Five dollars is paid for cover and full page pictures. No photos are returned.

Issued monthly at the rate of $4.00 a year, 35 cents a copy, by the American Foreign Service Association, 1908 G Street, N. W., Washington, D. C. Entered as second-class matter at the Post Office in Washington, D. C., under the Act of March 3, 1879.

Printed in U.S.A. by Monumental Printing Company, Baltimore.

CONTENTS

APRIL, 1958
Volume 35, Number 4

Photo by Paul Child

Full-scale model of a rocket outlined against the sky, at the West Berlin industrial fair two years ago. **(See page 52.)**

INDEX TO ADVERTISERS

April, 1958

CHANGES IN ADDRESS

Please help us keep our mailing list up-to-date by indicating to the Circulation Manager of the JOURNAL changes in address, in advance when possible. APO or FPO address should be mentioned if applicable. It is no longer possible to replace copies undelivered because of their being sent to the old address.

HONOR AWARDS CEREMONY

April 2, 1958

Distinguished Service Award

MURPHY, Raymond E.

NUFER, Albert F. (Posthumous)

Superior Service Award

DREIER, John C.
MCGREW, Donald J.
SAVAGE, Carlton
TYSON, Leonard S. (Posthumous)
WARREN, George L.
WELCH, Rolland
WILKINS, Fraser
WOLF, Joseph J.

American Consulate, Port Said, Egypt
American Consulate General, Alexandria, Egypt
American Embassy, Cairo, Egypt
American Legation, Budapest, Hungary

Meritorious Service Award

ABRAHAM, Rodger C.
BAXTER, Craig
BRACCIO, Bruna
BYRNE, Patricia M.
CAMERON, Gertrude G.
CARGO, William I.
CHOHEEN, Sai
DAVIS, Horace J.
DOWRICK, Lillie B.
DUGGAN, Ellen M.
ELLISON, Charles M.
EPHRAIMOFF, George S.
ESTES, Thomas S.
FORD, Hillman S.
GEANEY, Victoria S.
HALL, James D.
HECHT, Elizabeth
HELTBERG, Arnlioth G.
HENDERSON, John W.
HOWLAND, Harold E.
KENWORTHY, Nelson A.
LEE, Guy A.
LONG, Edward T.
MARQUES, Adelia
MCAULIFFE, Eugene V.
MCDOWELL, Eleanor C.
MELONE, Roy R.
MEYER, Armin H.
NEWSOM, David D.
NOLAN, Charles P.
OSKOUI, Mahmoud
OTEPKA, Otto F.
OTTE, Heinrich S.
PAUL, William E.
PRYOR, Hallie Mae
RICE, Elizabeth
RIEMER, Nell
SIRACUSA, Ernest V.
SMITH, Thomas C.
SURIC, John A.
VARY, Elizabeth A.
WALSH, John Patrick
WESTFALL, Virginia C.
WHITEHEAD, Marguerite G.
WILSON, Frances M.

American Consulate, Salzburg, Austria
American Consulate General, Jerusalem, Palestine
American Consulate General, Naples, Italy
American Embassy, Amman, Jordan
American Embassy, Beirut, Lebanon
American Embassy, Damascus, Syria
American Embassy, Rome, Italy
American Embassy, Tel Aviv, Israel
Consular Section, American Embassy, Vienna, Austria
American Embassy, Vientiane, Laos
News Division, Bureau of Public Affairs
Speaking Arrangement Section, Bureau of Public Affairs

Commendable Service Award

ALCIVAR, Carlos
ALLEN, Robert B.
ALLISON, Helen C.
ALTMAN, Daniel L.
ANGRESIUS, Einar Alfred
BLOOMFIELD, Richard J.
BOHNE, Frederick A.
BOOG, Arthur A.
BREWSTER, William L.
BROUWERSHAVEN, Johannes van
BROWN, Dorothy E.
BROWNE, Frederick A.
BROWNE, Reynold O.
BULLICK, Mary V.
CALLEJA, Velia
CARTER, Harry M., Jr.
CEBALLOS, Juan Diaz
CERTOSIMO, Antonio
CLARKE, Helenann
COETO, Roberto
CORONA, Manuel
CURRAN, Alice T.
DELONG, Vaughn R.
EASTWOOD, Lelah Joy
EBERHARD, Fritz
EIRING, L. Lucille
ELLIOTT, Geraldine
EMMERICH, Helmut
ESEIZA, Miguel
ESTEP, Hunter L.
FABRIZZI, Mario
FEE, William E., Jr.

Honor Awards *(from page 4)*

FENSTERMACHER, Harvey E.
FITZSIMMONS, Winifred M.
FLAHAVEN, Catherine M.
FLORES, Manuel
FOLIGNO, Margherita
FORD, John W.
FOUST, Juana A.
FRANICZEK, Stefan
FULLER, Edna C.
GARCIA, Arturo
GOEHRUM, Hildegard
GOODWIN, Myra L.
GRAIF, Sidonia
HALBERT, Collie E.
HARLAN, Robert H.
HART, Gertrude R.
HATTEN, Charles E.
HINE, Dorothy M.
HOWELL, Olive M.
HUNTER, Grace M.
INGRASSIO, Carl T.
KLIEGMAN, Eunice T.
KNAUF, Kenneth W.
KRNJAIC, Stojan
LASRY, Albert J.
LECOMTE, Marcelle D.
LIEBOF, Jack
LOPEZ, Rafael
LUCHTON, Natalie F.
LUNA, Roberto
MACHATTON, Robert P.
MARKLEY, Barbara J.
MASINGILL, William T.
MCKINNON, Ruth L.
MEADOR, William
MENDEZ, Francisco
MEYER, Francis G.
MILLISON, Earl G.
MILNE, Matilda L.
MOLLO, Attilio
MUCCI, William A.
NELSON, Walter L.
NG, Yong-sang
NUKAZAWA, Tetsuo
OLSEN, Glen S.
O'ROURKE, Anastasia C.
PATTERSON, Richard S.
PETERSEN, Evelyn M.
PHELAN, Harry M. Jr.
PHILLIPS, Frank E.
PROVENCHER, Roger A.
RAMIREZ, Santiago
RAMOS, Daniel
REHNELT, Friedrich
RICE, Esther M.
RICHARDSON, Clydia Mae
RIDDIFORD, George G.
RIVERA, Rudolph L.
ROBERTS, Jeanette M.
ROBERT, Lawrence J.
RODGERS, Martha E.
ROSSOW, Robert, Jr.
SARSFIELD, Bobbie J.
SCHRAGEN, Fritz
SCHUMACHER, Wilhelm
SEGUIN, Henrietta
SHINKWIN, Charles A.
SHIRLEY, Charles W.
SIMCIC, Lea
SITTERTZ, Wilhelm
SPRIGMAN, Mary
STEFEKOS, Helen A.
STROKOSCH, Leo
TACCONI, Elisa G.
TELLER, Hugh H.
THOMAS, John M.
TILK, Marcellus
TOUTOUNCHI, Edmund H.
TRONE, Winson O.
TYRRELL, Ada M.
USHER, Richard E.
VARNEY, Olive P.
VITALE, George R.
VOGT, Nina Klein-de
VON ELTZ, Sylvia
WAGNER, Geraldine N.
WALKUP, Alice V.
WALZL, Herbert
WHARTON, Beatrice C.
WHINERY, Marion M.
WILLIAMSON, Henry C.
WILSON, Grace I.
WOLFSON, Philip J.
WOLTER, Peter
WRIGHT, William D.

Clerical Selection Section, Office of Personnel
Messenger and Processing Unit, Reports and Operations Staff, Executive Secretariat
Training and Control Branch, Visa Office
Visa Unit, American Embassy, Habana, Cuba

SENIOR OFFICERS COURSES

TWO NEW training programs have been added this year to the usual War College courses: the Harvard Seminar which was organized by Robert R. Bowie, former Assistant Secretary of State; and the Foreign Service Institute Senior Officer Course which is designed along the lines of the War College courses. The Harvard Seminar will be presented in the Center for International Affairs at Harvard University.

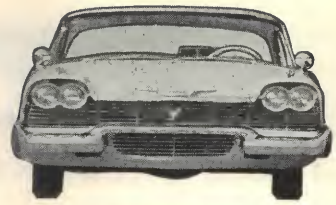
Until the Department of State's budget request has been finally approved by the Congress, the designations for the F.S.I. Senior Officer Training Course must be considered as tentative. As soon as final word is received, the officers will be notified.

(Continued)

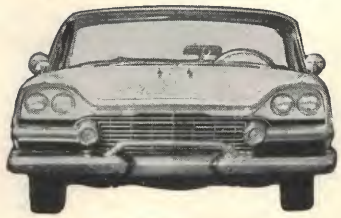
DISCOVER

COMPARE

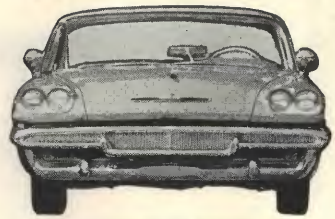
DECIDE



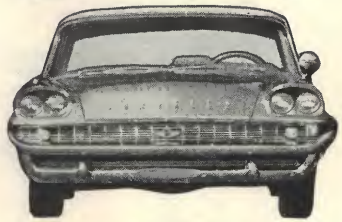
PLYMOUTH



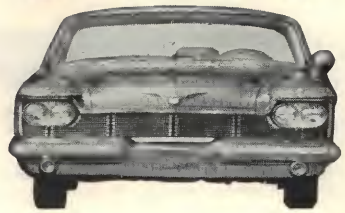
DODGE



DE SOTO



CHRYSLER



IMPERIAL

FOR '58, MORE THAN EVER, THE *FORWARD* LOOK IS THE ADVANCE DESIGN!

Discover the newest of the new! It's all here in the five new cars of The *Forward* Look for '58. Their truly *Advance* Design—form and function conceived *together*—keeps you years ahead of the time. You'll discover what we mean wherever you look—from fresh front-end treatment to new taillight glamour with graceful ride-steadying fins.

You'll find the exciting promise of the low, sleek silhouette is horne out by unparalleled performance from new smoother, quieter, more economical engines. And Torsion-Aire suspension is yours at no extra cost.

Detailed specifications and prices are available in the Personal Purchases File at your nearest Embassy. And—Chrysler Corporation is happy to offer its Diplomatic discount on the car of your choice, including special equipment. Select your car and equipment now and order directly from Chrysler Corporation for delivery at the Factory or any principal city in the U.S.A. A world-wide organization of distributors and dealers assures the finest service.

WRITE OR CABLE: | **CHRYSLER CORPORATION, Export Division, Special Sales Department**
P. O. Box 1688 • Detroit 31, Michigan • Cable: "Chedco" Detroit

Senior Officers Courses *(from page 6)*

Harvard Seminar

Bond, Niles W.	FSO-1	Rome
Owsley, Charles H.	FSO-2	Department

F.S.I. Senior Officer Course

Boswell, William O.	FSO-1	Milan
Brewster, Herbert D.	FSO-2	Department
de Zengotita, Juan	FSO-3	Labor Dept.
Fessenden, Russell	FSO-2	Paris
Jova, Joseph J.	FSO-3	Department
Larson, Thomas B.	FSO-3	Department
Lay, S. Houston	FSO-2	Department
Lisle, Raymond E.	FSO-3	Department
Nicholl, Helen R.	FSO-3	Department
Price, C. Hoyt	FSO-3	Department

WAR COLLEGE SELECTIONS
1958-59 Session

National War College

Belton, William	FSO-1	Santiago
Bergus, Donald C.	FSO-3	Department
Brandin, Robert M.	FSO-2	Berlin
Clark, G. Edward	FSO-3	Department
Dearborn, Henry	FSO-2	Lima
Dickinson, Dwight	FSO-3	Department
Erstein, Richard	USIA	Washington
Fearey, Robert A.	FSO-3	Department
Finn, Richard B.	FSO-3	Department
Hannah, Norman B.	FSO-3	Department
Landry, Lionel	USIA	Djakarta
Linebaugh, J. David	FSO-3	Bonn
Magistretti, William L.	FSO-2	Department
McElhiney, Thomas W.	FSO-3	Department
Montllor, Joseph J.	FSO-3	Department
O'Brien, John R.	USIA	Washington
Ryan, Robert J.	FSO-2	Department
Sanders, Terry B., Jr.	FSO-1	Department
Schnee, Alexander	FSO-2	Department
Thacher, Nicholas G.	FSO-3	Baghdad
Torin, Irwin M.	FSO-2	Bonn

Industrial College of the Armed Forces

Dunn, L. Milner	FSO-3	Department
Moline, Edwin G.	FSO-2	Department

Air War College

Marcy, Oliver M.	FSO-3	Belgrade
Usher, Richard E.	FSO-2	Rangoon
Ware, Hoyt N.	USIA	Buenos Aires

Army War College

Blue, William L.	FSO-2	Bern
Watrous, Livingston D.	FSO-3	Department

Naval War College

Fisher, William Dale	FSO-3	Florence
Scherbacher, Marcus	USIA	Seoul
Williams, William L. S.	FSO-3	Dacca

Canadian Defence College

Smith, Rufus Z.	FSO-3	Department

Imperial Defence College

Meloy, Francis E., Jr.	FSO-2	Paris

Armed Forces Staff College

Astill, William	USIA	Addis Ababa
Naughton, Clifton	USIA	Rome

BUILT-IN SAFETY TO GIVE YOU "Peace of Mind" ON ANY ROAD—IN ANY COUNTRY

Safety Proved on the Speedway for Your Protection on the Highway

The Firestone NYLON "500"

Protects Against Impact

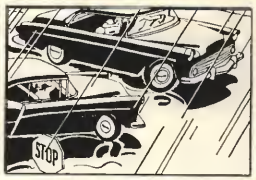
The Firestone Nylon Safety-Tensioned Gum-Dipped Cord body is 91% stronger, making it virtually immune to impact danger.

Protects Against Punctures and Blowouts

A special air-tight safety liner seals against puncturing objects and makes blowouts as harmless as a slow leak.

Protects Against Skidding

The Gear Grip Safety Tread with thousands of safety angles provides a silent ride and greater traction under all driving conditions.



FIRESTONE INTERNATIONAL AND INTERAMERICA COMPANY

The Secretary and Mrs. Dulles, Chairman of the Board Allan Lightner, Jr., and (standing) AFSA President Tom Wailes.

Seven Candles on His Cake

by Gwen Barrows

On February 25th congratulations from all over the world poured into the office of the Secretary of State. It was his seventieth birthday, over 700 editorials were published by American newspapers saluting him, and there was wide recognition as James Reston said in the *New York Times* that Mr. Dulles "has been both the chief architect of the nation's foreign policy and its principal negotiator, and somehow he has managed to retain both his power and his sense of humor."

Out of a day crammed with important meetings—beginning with an official breakfast at 8 a.m. and not ending until after eleven o'clock that evening—the Secretary took time to attend the monthly luncheon meeting of the American Foreign Service Association at the Shoreham Hotel. It was the largest luncheon AFSA has held to date and we heard many comments on how genial and relaxed the Secretary looked and on what a happy occasion it was.

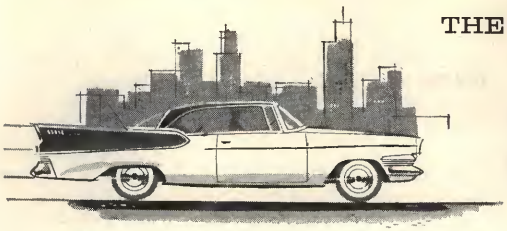
After luncheon had been served, and a birthday cake lighted with seven candles had been cut, as reported in the *Foreign Service Newsletter,* there were toasts by Loy Henderson, Tom Wailes and Allan Lightner, Jr. The Secretary replied to a standing ovation saying that he had been insistent that he should have some moments of intimacy within that day, "a day of some importance to me, and these are those moments. Now some people would not think that a gathering of four or five hundred people was an occasion of intimacy, but I think that it is because over these years in which I have been associated with the Foreign Service, and particularly during the last five years and more during which I have been Secretary of State, I have gained a feeling of fellowship, comradeship with the Foreign Service. So that whenever I am with a group of you I feel relaxed and at home and in an atmosphere of intimacy. . .

"As I stand here at the threshold of a new decade my thoughts inevitably go back to earlier thresholds of new decades. It is sometimes said of me that I always wanted to be Secretary of State. I can assure you that that is not the case. As I approached the beginning of my second decade, at the age of 10, I had a very clear-cut ambition and that was to drive the locomotive of the New York Central Railroad, No. 999, which had achieved a speed, then unprecedented, of 60 miles an hour. Then as I approached the next decade, at the age of 20, and was gradu-

(Continued)

RARELY EVER, SUCH GLAMOUR IN AN AUTOMOBILE...

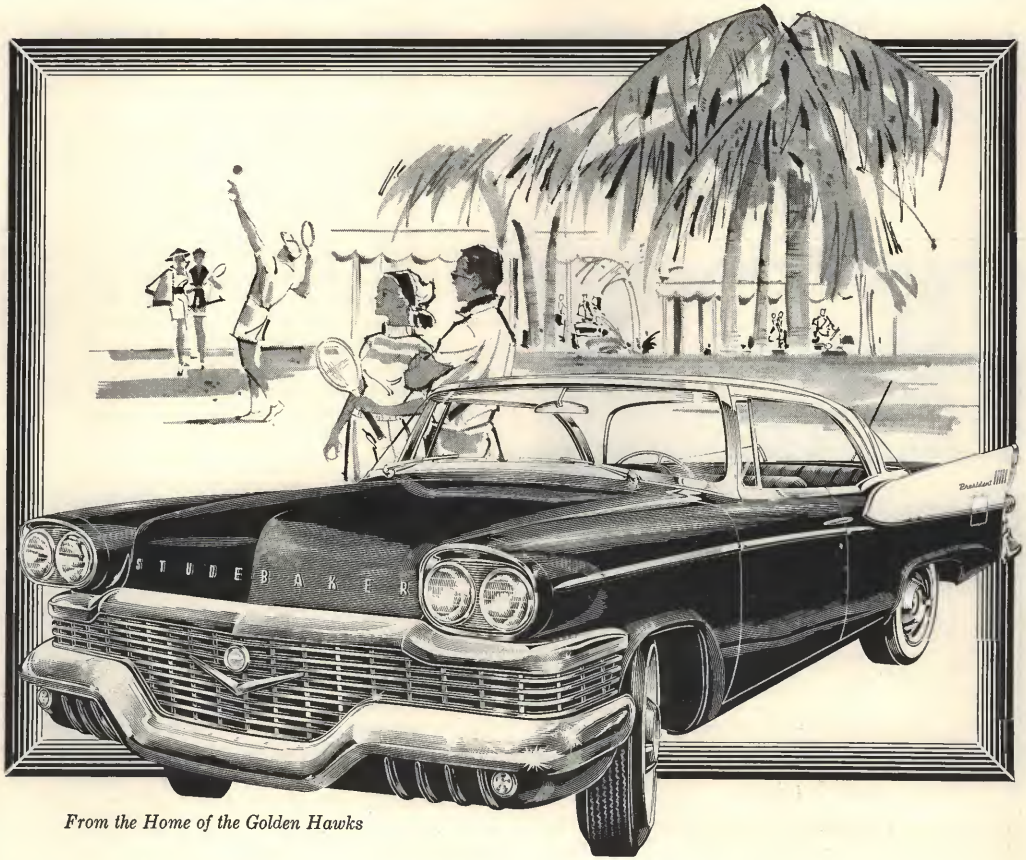
THE SCINTILLATING STUDEBAKER



Starlight

Here is a star of the first magnitude in the constellation of Studebaker-Packard automobiles. It is the President Starlight, an entirely new hardtop of perfect proportions crafted to high standards of workmanship and styled to standards of high fashion.

Its roof is a graceful line . . . thin, strong posts, front and rear, allow visibility that is really panoramic. Seats and appointments are unmistakably in the luxury category. Superior handling qualities and effortless maneuverability make the Starlight easy to park and a pleasure to drive under all conditions. See and guest-drive the luxurious President Starlight, or the economical Commander Starlight at your Studebaker-Packard dealer's, *today!*



From the Home of the Golden Hawks

Studebaker-Packard

CORPORATION, EXPORT DIVISION, SOUTH BEND, INDIANA, U.S.A.

Where pride of Workmanship comes first!

Seven Candles *(from page 10)*

ating from Princeton, I had to decide what to do. Well, again I was not clear about what to do and the result was I took a year off within which to make a decision. I suppose some people wish I had taken a year off to make all my decisions.

"And then as I attained 30 I was identified in a modest but still significant relationship with President Wilson, and I believed with the fervor which goes with that age, and should go with that age, that we really were waging a war that would end war and make the world safe for democracy. Then as I was 40 I had to carry somewhat unexpectedly the heavy responsibilities which, due to the premature decease of my elders, left me the head of one of the great law firms of the world. And I remember well my 50th birthday, with Mrs. Dulles, feeling particularly concerned about conditions in Asia. We had gone out there in '38 and I spent that 50th birthday on a ship from Japanese-occupied Shanghai to Japanese-bombed Canton. Then at 60 I was cooperating in an effort to build post-war policies, and I recalled, as I spoke this morning to the group to which Mr. Henderson referred, it was almost exactly 10 years ago to the day, when I went with Secretary Marshall to the National Cathedral and inaugurated there a series of meetings held throughout the nation in support of the European Recovery Plan. And now as the next decade approaches I am here happily with you.

"I spoke of the sense of fellowship which I have developed over these years with the Foreign Service of the United States, and that is a very real thing to me. I have come, during these years, to appreciate better than ever before the service that is rendered by this Foreign Service group and the sacrifices that it gallantly assumes. . . ."

Mr. Lightner then concluded the remarks by reading a resolution which had been passed that morning by the Directors of AFSA:

RESOLUTION

WHEREAS, he was born in the blizzard year of '88 and has lived in a whirlwind ever since;

WHEREAS, after a distinguished apprenticeship as soldier, lawyer, diplomat he was placed in full orbit as Secretary of State on January 21, 1953 and has since that time circled the globe at speed for a total of 445,935 miles of air travel, and

WHEREAS, he has, as an old woodsman, developed great skill in negotiating the rapids and whirlpools of international affairs and has been a resolute searcher for the quiet pools where true peace lives, and

WHEREAS, it is now clearly established that he will never be his age, even if he cannot fail to influence and leave his mark upon it,

THEREFORE, BE IT RESOLVED that the American Foreign Service Association extends to John Foster Dulles congratulations and best wishes on the occasion of his 70th birthday. Done in this city of Washington, D. C., February 25, 1958

NEW! From ZENITH!

World's Most Magnificent Radio!

all transistor

TRANS-OCEANIC®

Smallest and Lightest Band Spread Short Wave Portable Ever Produced

Here is the ALL-TRANSISTOR version of the world's most famous radio—the Zenith Trans-Oceanic. Receives Standard Broadcasts, International Short Wave, Marine Weather, Amateur Short Wave Coverage Bands . . . plus ship-to-ship and ship-to-shore broadcasts. And operates on low cost flashlight batteries available anywhere!

Powered with 9 Matched Transistors to Tune In The World . . . Actually 92% more undistorted power output than any other tube-type short wave portable.

Beautiful, Regal, Rugged . . . Engineered as soundly as a shock-proof watch. Tropically treated to perform even in high jungle humidity.

3 Built-In Antennas . . . The handle itself telescopes to a vertical Waverod® Antenna for short wave reception. Wavemagnet® Antenna for local broadcasts. Another Wavemagnet Antenna is removable to attach to window in planes, trains, automobiles.

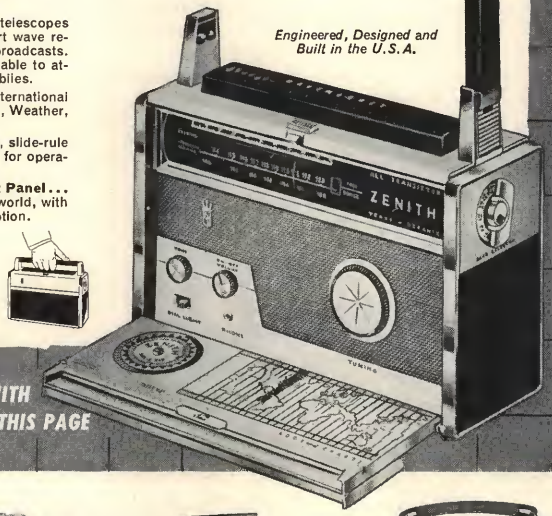
8 Super Sensitive Bands . . . Including International Short Wave, Standard Broadcast, Marine, Weather, Amateur Short Wave.

Rotary Band Selector . . . Spread-band, slide-rule dial. One knob tunes all 8 bands. Dialite for operation under poor lighting conditions.

New Log Chart Compartment In Front Panel . . . Lists major short wave stations in the world, with their frequencies and hours of best reception.

Operates on Type "D" Flashlight Batteries . . . Available anywhere. Low cost transistor operation eliminates need for tubes, AC/DC power outlet and bulky "B" batteries.

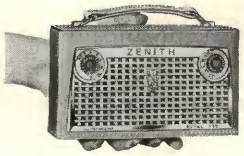
Engineered, Designed and Built in the U.S.A.



A complete world-wide "radio receiving" station in a sturdy, metal case only 12½" wide, 10¼" high, 4⅞" deep. Weight with batteries: 13 lbs. **Royal 1000**

NOW! CHOOSE YOUR NEW ZENITH ALL-TRANSISTOR RADIO RIGHT FROM THIS PAGE

Rated best of the new pocket transistor radios! 8 transistors. RF stage. Non-breakable case. Up to 400 hours life with 4 Mercury batteries; 100 hrs. with Penlite batteries. In Ebony color, White or Maroon. **Royal 500-D**

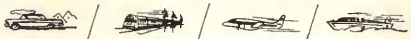


8 transistors! Tuned RF stage. 3-gang condenser. Negative "feedback." 400 milliwatts undistorted output. Up to 350 hours life with type "C" flashlight batteries. Genuine leather cabinet. **Royal 750**

7 transistors. Non-breakable case. Up to 400 hours performance with Mercury batteries . . . 100 hours with Penlite batteries. Big dial scale. Dual purpose handle. Ebony color, Pinefrost Green, Maroon. **Royal 300**

Hand-size 7-transistor portable in genuine leather cabinet. Negative "feed-back." 4" speaker. Precision vernier tuning. Operates with type "C" flashlight batteries. 400 milliwatts undistorted output. **Royal 700**

A ZENITH All-Transistor Radio Plays Where Others Fail . . .



AUTOS / TRAINS / PLANES / BOATS

and is as Necessary as a Flashlight in Time of Power Failure

QUALITY BY

Zenith

The Royalty of Radio

ZENITH RADIO CORPORATION, International Div., CHICAGO 39, ILL.

Rockefeller Public Service Awards, 1958

ENGLE, James B.	Italian Desk Officer WE, Department of State	Study in Western Europe of Socialist International
ROSE, Paul W.	Director, USOM, Nepal	Study for degree of Master of Public Affairs, Woodrow Wilson School of Public and Intl. Affairs

NEW CHIEFS OF MISSION

ALLISON, John M.	Czechoslovakia
HARE, Raymond A.	United Arab Republic
MOOSE, James S., Jr.	Sudan
NEWBEGIN, Robert	Honduras
WILLAUER, Whiting	Costa Rica
WOODWARD, Robert F.	Uruguay

BIRTHS

BARNETT. A daughter, Eugenia Lois, born to Mr. and Mrs. Robert W. Barnett, March 1, 1958, in The Hague.

BROGLEY. A daughter, Mary Stuart, born to Mr. and Mrs. Bernard J. Brogley, February 4, 1958, in Nagoya.

JERNEGAN. A son, Jeremy Hollingsworth, born to Mr. and Mrs. John D. Jernegan, March 2, 1958, in Rome.

KERRIGAN. A son, David William McLeod, born to Mr. and Mrs. William M. Kerrigan, February 7, 1958, in Washington.

STEFAN. A daughter, Susan Frances, born to Mr. and Mrs. Charles G. Stefan, February 27, 1958, in Washington.

VOORHEES. A daughter, Lisette, born to Mr. and Mrs. Harold C. Voorhees, February 8, 1958, in Mount Kisco, New York.

MARRIAGES

ROSS-DIECKMAN. Jo Anne Dieckman and Robert H. Ross, both of the Foreign Service, were married December 14, 1957 in Washington. Mr. Ross is assigned to the Department as Assistant Chief of Couriers and Mrs. Ross is working in the Bureau of Far East Affairs.

RETIREMENTS

F.S.O. BENET, Edward S.
F.S.S. POWELL, Charles K.
F.S.R. MARTIN, Jane

IN MEMORIAM

BOWMAN. Thomas DeWitt Bowman who retired as Consul General in Canton in 1947 after 36 years in the Foreign Service, died February 18, 1958 in Winter Park, Florida. During his long years of service, Mr. Bowman served in posts in Canada, Chile, Mexico, Italy, the Union of South Africa and China.

DONOVAN. Colonel Andrew E. Donovan, father of Foreign Service Officer Andrew E. Donovan II, died March 3, 1958 in Chelsea, Massachusetts.

GERCKE. George J. Gercke, Foreign Service Staff Officer, died February 8, 1958 in the Naval Medical Center, Bethesda. Mr. Gercke who spent eight years in Japan with C. I. and E. and the State Department was a Motion Pictures officer with U.S.I.A.

WADSWORTH. George Wadsworth, recently returned from his assignment as Ambassador to Saudi Arabia, died March 5, 1958 at the Naval Medical Center in Bethesda. Ambassador Wadsworth in his long and distinguished career of 42 years in the Foreign Service, had also served as Chief of Mission to Lebanon and Syria, Iraq, Turkey and Czechoslovakia. Among his survivors is a daughter, Mrs. Walter W. Harris. Mr. Harris is a Foreign Service Staff Officer assigned in Washington.

25 years ago

BY JAMES B. STEWART

Hull Succeeds Stimson

On February 28, 1933, the Foreign Service Association gave a luncheon in honor of Henry L. Stimson, Secretary of State. On March 4th his successor, Cordell Hull, took the oath of office. The CHRISTIAN SCIENCE MONITOR said: "No supermanness, no rarefied audience-chamber aureole, or cocksure brilliance or overconfident legalism characterize Senator Hull. He is calm, sympathetic, friendly, unassuming. In one dominant respect, the new Secretary of State is an authority. He has mastered trade and tariff problems as have few men. This is his approach to all the problems which will confront him."

Memorial Tablet Unveiled

The Memorial Tablet erected by members of the American Foreign Service Association in honor of the Diplomatic and Consular officers who lost their lives under tragic or heroic circumstances, was unveiled on March 3, by the Hon. Henry L. Stimson, Secretary of State. The Secretary was presented by Consul General Homer M. Byington, chairman of the Executive Committee of the Association.

Foreign Service Changes

Merritt Cootes, Port au Prince, to Foreign Service Training School.
Ralph J. Blake, Tsinan, China, to Harbin, China.
Douglas Jenkins, Jr., Yunnanfu, China, to Nanking, China.
Llewellyn Thompson, Colombo, Ceylon, to Geneva, Switzerland.
Orray Taft, Guadalajara, Mexico, to Mexico City.
Bernard C. Connelly, Sydney, Australia, to Melbourne.

He Missed the Modern Point of View

There is a story in the Journal about a consul who had been at an obscure tropical post far too long. He received an inquiry about the market for brassieres. "What are they?", thought the Consul. He knew about brass bedsteads, ornamental brass fenders, tongs and things for the fireplace, and he knew about braziers, used at his post for cooking, but he concluded that brassieres must mean more than that. So, striking out boldly to cover his ignorance, he replied, "There is no market at Pijijiapan for brassieres. The country abounds in choice hardwoods and the local carpenters are competent to satisfy the trade. As for fireplace equipment, this Consular District is within the torrid zone and fireplaces are not used."

Rambling Notes: Comes a report from Naples that Howard (Perce) Travers made a hole in one on the Palermo links. The ball didn't roll in, mind you, "it went into the cup on the fly," says Perce. Incidentally, it was Chief Byington who bestowed the nickname.

Italian paper explains Lame Duck or 20th Amendment: "The newly elected Congressmen remain at their homes following their usual vocations and do not take the road to Washington until after four months to arrive there on the Fourth of March. For this reason they are called "Lame Ducks."

Applicant for position writes: "I believe that one's personal appearance is a great factor in success and for this reason I take pride in dressing well and in making the most of what nature has given me. I regret that neither of the photographs that I enclose—one in a bathing suit—shows my teeth, as this is one feature of my personal appearance of which I am justly proud."

Well, She Said "Please", Didn't She?

A 12-year-old Texas school girl wrote to the Consulate, Tientsin, China, for "books containing pictures of China, money that they use there and also, please, a rink or a *risk* watch to remember you forever." Follow-up report—1958: "Susie" is now 30 and as her *rink* watch ticks away the years she strums away at her favorite "Oh give me something to remember you by." She already owns 32 acres in downtown Dallas.

A daughter, Sheila Mills, was born September 10, 1932, at Panama City, to Diplomatic Secretary and Mrs. Sheldon T. Mills. A son, Henry Allen Holmes, was born on January 31, 1933, at Bucharest, Rumania, to Diplomatic Secretary and Mrs. Julius C. Holmes.

Satellite Prophecy

Edward J. Norton, retired FSO, who was Chief of Personnel just before Chief Byington, recently wrote: "So you have been reading Mme. Calderon de la Barca's Life In Mexico. So have I for the umpteenth time." Like Ed, I am also an "umpteenth timer." A few weeks ago I picked up the delightful book, written about 1840, and my eyes popped as I read: "Our forefathers had more leisure than we, and probably we have more than our descendents will have, who, for aught we know, may, by extra high-pressure, be able to 'put a girdle around the Earth in forty minutes.' "

It was from the editors of *Time* that I found out more about that prophetic line. They wrote: "Many thanks for advising us of the quote from Mme. Calderon de la Barca* from her classic Life Of Mexico. Mme. de la Barca apparently was visionary enough to believe that at least one line from Midsummer Night's Dream could be made a reality—probably you are aware that the quote is a line for Puck in the Shakesperian play (Act II, Scene 1, Line 175). Although some of us recalled the line when the first diagrams of the satellite's orbits were published, it was another *Time* reader who supplied us with book, chapter and verse."

*Nee Frances Erskine Inglis, born 1804 in Edinburgh, wife of first Spanish Minister to Mexico.

* * *

Benjamin Franklin's classic prescription for a diplomat—"Sleepless tact, unmovable calmness, patience that no folly, no provocation, no blunders can make." Then there was the definition of a diplomat by the applicant for a position—a would-be diplomat: "A diplomat, as I take it, is one who says what he means as if he don't mean what he says." The applicant added, "And that I can do."

Flying Saucers:

Are They Real?

by James VILLARD

On June 24, 1947, a new era began—an era of mystery, which, for a decade now has puzzled people all over the world. On that day Kenneth Arnold, a Boise, Idaho, businessman, was flying his private plane near Mt. Rainier, Washington, when he saw nine strange objects ahead of him. He said their speed was unearthly, and their odd skipping motion made him think of flying saucers. The name "flying saucer" stuck. After that one sighting, which was reported in newspapers all over the country, thousands of other reports of sightings began to pour into the Air Force, the Pentagon, Civil Defense authorities, and the newspaper offices all over the country.

The Air Force started an investigation called "Project Saucer" while the public demanded an answer to the mystery of modern times: What are the flying saucers? Before the project was terminated and even after a report was released that the supposed "space ships" were nothing but mirages, hot and cold air, and hallucinations, the name of the project was changed several times. Reports continued to come in from all over the world, however, that authenticated sightings of strange objects had been made and are still being made by trained observers, pilots, radar operators, policemen, Armed Service personnel and thousands of "just people."

Few perhaps realize the enormous extent of interest today in the saucer subject. There are many hundreds of saucer clubs and publications already in existence in the U.S.A. Nor is interest limited to the United States. Quite to the contrary—organizations have been formed in England, Austria, Switzerland, France, Germany, Brazil, Mexico, Canada, Alaska, Hawaii, Japan, as well as Australia and Iceland. In addition, lecturers are touring the world giving talks to fans who crowd into auditoriums to hear anything about the saucers. Last year, a saucer convention was held in South Africa, and it was reported that thousands attended. Thousands also attended a saucer convention in California covered by Life Magazine last year.

Henry J. Taylor, Ambassador to Switzerland, last year told a Senate hearing not to "laugh off flying saucers." Air Marshal Lord Dowding, who was Commander in Chief of the Royal Air Force during the Battle of Britain, said to newsmen recently that flying saucers are real and that they come from outer space. This, in fact, seems to be the conclusion that most researchers arrive at after having investigated the situation. Now that we see that the travel in space is inevitable, with Sputniks and Explorers circling the Earth, and talk of reaching the moon in a few years, it seems quite logical that those who inhabit other planets would be interested in us.

Last November newspapers reported a wave of sightings. These had been made by Air Force personnel, by sheriffs and others, including a priest in the Fiji Islands. Many of the sightings that were reported in American newspapers were not reported overseas and vice versa.

Another question that comes to mind about the saucer situation is: Since the Air Force continues to investigate reports of sightings, although it has publicly declared that there are no such things as saucers, is there not a possibility that the Air Force may believe that saucers are real? Certainly they would otherwise be reluctant to waste considerable time and money on such investigation.

Scientists say that there are millions of worlds capable of producing life. It is possible that we are being observed like animals under a microscope by spacemen trying to see what makes us tick and why we do such incomprehensible things as fight wars.

For many years strange phenomena have been observed on the Moon. These phenomena are rarely reported in the newspapers. For instance, there is the mystery of the strange bridge which appeared on the Moon for two months and then vanished without a trace overnight! The bridge was said by many astronomers to be the work of intelligent beings—not a natural phenomenon. Strange lights have moved about on the surface of the Moon and the size of craters has changed: What is going on up there? Many newspapers recently carried a photo of a flying saucer reported to have been taken by the Brazilian Navy. Currently the Brazilian Government is holding open discussions on saucers. This may serve as an example for other nations.

In closing, let's not forget that in 1945 an Admiral was reported to have said about the Atom Bomb: "This is the biggest fool thing we have ever done. The bomb will never go off—and I speak as an expert on explosives." Somehow his words, spoken as an "expert," sound too much like the pronouncement of flying saucer debunkers.

Fifteen-year-old James Villard, son of Ambassador Villard, is editor of the bi-monthly UFOLOGER which he publishes with Dan Washburn. Both Dan and Jim attend St. Albans School.

SPACE TRAVEL

by Dr. Wernher von BRAUN

EQUIVALENT* by Alfred Stieglitz

SOON after the 85th Congress convened, in January 1957, Representative Frank M. Karsten introduced a bill to create a Joint Committee on Extraterrestrial Exploration.

The Missouri Congressman proposed a committee made up of nine members of the Senate and nine members of the House. It would make continuing studies of activities and problems related to the development of extraterrestrial exploration and travel.

Earlier Rep. Karsten introduced a bill to name the first earth satellite "Astronaut." The House Parliamentarian had some difficulty in deciding which committee should handle such legislation. Finally he sent both measures to the Committee on Foreign Affairs. Perhaps one may read into that reference a realization that international relations will be greatly influenced by the rapid advance of rocket technology and its logical utilization in the exploration of outer space.

A few years ago proposals of the type advanced by Rep. Karsten would probably have inspired ridicule. But this incident was soberly reported by the daily press, attesting to public acceptance of space travel concepts which, in the not too distant past, were greeted with scorn. Successful launchings of high altitude rockets and long-range ballistic missiles have suddenly provided an aura of respectability for all sorts of theories, conjectures, and promises of flights to the Moon.

Nevertheless there are cogent reasons for prompt consideration of many questions arising out of space travel probabilities. U.S. Army missiles have penetrated deep into outer space and have reached unprecedented altitudes. Aircraft and balloons of the U.S. Air Force have carried men beyond most of earth's atmosphere. The accomplishments of Soviet rocket developers have demonstrated a capability which can only lead to a conclusion that at least two major powers possess space "hardware". The Russian success in launching an earth satellite preceded the launching of the U. S. vehicle, Project Vanguard, in connection with the International Geophysical Year.

These are yardsticks by which to measure the level and the speed of advancing technology. Chemically propelled vehicles now in development, such as the intercontinental ballistic missile, will within the next five or ten years permit the transportation of scientific equipment to the Moon. Vehicles of the same order could also launch orbital satellites much larger and therefore capable of carrying heavier and more complex instrumentation than the first earth satellite for purposes of reconnaissance, weather observation, research and communications.

The next step is the manned vehicle which poses the knotty problem of a return trip and must therefore withstand the extremes of heat generated upon re-entry into earth's atmosphere. To overcome this immediate problem, it has been suggested that small, winged planes capable of gliding back into the atmosphere at diminishing velocities could be employed. When launched from the tip of a large, two-stage rocket booster, these planes could serve as a means of commuting between earth's surface and large, orbital satellite stations which function as assembly and launching bases for deep space ships, much as "Little America" serves as a base for polar explorations. Satellite stations could be prefabricated on earth and assembled in orbit, the sections having been transported by cargo rockets launched from the same kind of two-stage boosters. The stations would have practically infinite life at altitudes of 500 or more miles.

From these "way stations," deep space ships could explore the far reaches of the universe without ever touching earth. Since, prior to their departure from the orbit their weight would be balanced by centrifugal force, relatively

Wernher von Braun is Director, Development Operations, Guided Missiles, Army Ballistic Missiles Agency. ***See also page 36.***

*EQUIVALENT. 1923. From an exhibition of photographs by Alfred Stieglitz (1864-1946) currently being shown at the National Gallery of Art, Washington, D. C.

small accelerations would be required. There would be no need for streamlining and they could have relatively light structures. Detailed studies have shown that the Moon and the nearer planets, such as Mars and Venus, can thus be reached with conventional chemical propellants. Advanced propulsive systems employing nuclear power appear very attractive for deep-space operating conditions and, in due time, will open avenues beyond our neighbor planets.

Rocket technology has reached a point at which ventures which were theory yesterday are today's possibilities. All that is required is the determination by a major power to commit manpower, materials and money to one or more of these undertakings. They can be done. The time of their maturity depends largely upon the urgency of the need and the resources committed to the task.

Realization of that stark fact brings us to grips with the yet-unsolved question: will space exploration be a purely national venture destined to plant the flag of the victorious conqueror on other worlds, or will it be the joint enterprise of peoples interested only in extension of their knowledge and its beneficent fruits? Properly directed, space flight will bring a far greater degree of unity to mankind.

One has only to remember that the Europe of several centuries ago was an unrelated collection of small principalities and free cities. The revolution in transportation brought on by the steam engine, the truck and automobile impelled the emergence of larger states. Willingly or not, various peoples surrendered some national sovereignty in return for economic rewards and security made possible by larger nations. World War II brought in its wake an extension of this process along supranational lines; NATO is one example, the United Nations another.

This is not to suggest the evolution finally of an all-powerful world government which would completely eradicate nationalities among the peoples of the earth. Rather, they may become participants in a central authority akin to our democracy in which the rights of several states are preserved while some autonomy is relinquished by each member to a strong Federal government. National customs, diets, traditions may well survive. Air travel has positively influenced international relations. Space vehicles in their era will make mankind conscious of one world and the peoples of earth will tend to become a cohesive mass.

Some legal authorities, at least in this country and England, have explored the moot question of who controls space and where "outer space" begins. In the main they are inclined to look to the United Nations as a guardian against the threat of military domination by a single power or group of powers. C. Wilfred Jenks, associate at the Institute of International Law in Cambridge, England, advanced a "free-space" theory in 1956 which would concede to the UN jurisdiction over outer space and physical control of the Moon and its resources.

Participation by many countries in the International Geophysical Year, which will be highlighted by the U.S. and

Flight information may be projected on the new TV screen eliminating need for many instruments now used for high-speed flight. An exhibit in "Space Unlimited."

Russian satellite experiments, persuaded Andrew Haley, general counsel of the American Rocket Society, that there is tacit recognition of the rights of all nations to share outer space.

The deputy director of the UN legal department, Oscar Schachter, had advanced the "airspace" theory which would limit state sovereignty over airspace above its domain to the height at which aircraft and balloons can operate. John Cobb Cooper of the Institute of Advanced Studies at Princeton contends that the nations able to operate space vehicles will exploit their technical achievements to their own advantage.

Would a body of space law akin to maritime law eventually develop to support "freedom of space" in the same sense that "freedom of the seas" is employed? The parallel hardly suits a situation in which one satellite station, equipped with guided thermonuclear glide bombs, can dominate the earth. Against this threat the bombing plane able to operate only within the atmosphere is powerless. No nuclear-powered submarine enjoys such a vantage point from which any point on earth may be brought under direct observation and attack once in 24 hours.

There is a fascinating oversight in most of the legalistic and political discussions of future space travel. Thinking in terms of our own experience and environment, we are prone to assume that the planets and the silent vacuum beyond our atmosphere belong to man and that he is therefore free to plan their exploration and conquest. But what of the other worlds beyond our ken? Are there beings or things which may challenge our supremacy? Are they apt to be persuaded by man-made laws or conventions?

It should be quite obvious that technology will not stand still while we debate the niceties. What must be realized is that the means are at hand, or within the grasp of the United States and the Soviet Union. Science is carrying us rapidly into the unknown.

TO THE MOON

"I'd like to go to the moon but I haven't the time."—*Nikita Khrushchev, in an interview at Moscow, with John Godley, Lord Kilbracken.*

The Law of Space

For a new Age, new Laws are already being Established

by Eric Weinmann
and
Hugh C. MacDougall

WHAT SHOULD be the post allowance for the Consulate on Mars? What assistance should be given distressed spacemen? Though problems like these remain remote, the events of the past months made it clear that the space age is upon us. International law, the misty but very real framework within which foreign relations take place, must make room for man's new technological achievements. While the establishment of diplomatic relations with the other planets is fanciful, space law has already ceased to be a purely theoretical subject. The earth satellites whirling above us have created "new" international law by their very passage; law which must be considered in the conduct of our foreign affairs.

The advent of this new factor in the legal and diplomatic problems of the world has not been overlooked. President Eisenhower, as early as his State of the Union Message of January 10, 1957, declared the willingness of the United States "to enter any reliable agreement which would . . . mutually control the outer space missile and satellite development." More recently, we have proposed discussions with the Soviet Union leading to the banning of space war. And on an unofficial level, interest in the new concept of space law has been even more acute.

Articles dealing with the problems posed by activities in space have appeared regularly in leading journals of international law for many years; indeed, a bibliography of space law has already been published. At the Columbia University School of Law, Professor Oliver J. Lissitzyn has conducted a legal seminar dealing, in substantial part, with "problems arising from the use of outer space." Lawyers and scholars have insistently urged the consideration now. Best known, perhaps, is Andrew G. Haley, general counsel of the American Rocket Society, who has been called "The World's First Space Lawyer." The Prince of Hanover also made a reputation by writing in 1953 at the University of Goettingen the first doctoral dissertation on space law.

The gradual evolution of space law is of interest to the practicing diplomat for many reasons. In the first place, of course, it may enter into the content of international agreements and negotiations. But more important, perhaps, may be the way in which the actual conduct of space activity is treated in our international relations, for international law is still largely "customary." The growth of customary law may be influenced by the suggestions of writers and by analogies to older rules of law, but in the last analysis it is dependent on precedent—on the things governments do and how other governments react to them. So it must be remembered, in considering the possible solution of space law problems, that a few acts, generally acquiesced in, can establish better law than all the theorists in the world.

Where Does Space Begin?

This question, basic to any consideration of space law, bears an uncomfortable resemblance to the old saw about "How far is up?" The traditional answer of the law was "all the way," or, phrased in legal jargon, "*cujus est solum*

S/F.S.O. and local caddy, at the 11th hole, on one of the many available courses on Mars.

Eric Weinmann is a member of the New York Bar. Hugh C. MacDougall is a member of the Board of Editors of the "Columbia Law Review."

ejus est usque ad coelum" (whose is the soil, his it is up to the sky). In private law, the development of aviation spelled the doom of this ancient doctrine. Whatever theory they used, everyone agreed that the passage of aircraft could not be dependent on the whim of every landowner beneath. In international law, however, the needs of national security quickly overpowered the pleas of those who sought to establish a "freedom of the air" analogous to the traditional "freedom of the seas." By the First World War all major nations asserted absolute sovereignty over the airspace within their national frontiers. International aviation developed entirely through the conclusion of agreements permitting the entry of foreign aircraft on stated conditions. For a time the question of "How far is up" remained in abeyance.

> **WHEN they come to model Heav'n**
> **And calculate the Starrs, how they will weild**
> **The mighty frame, how build, unbuild, contrive**
> **To save appearances, how gird the Sphear**
> **With Centric and Eccentric scribbl'd o're,**
> **Cycle and Epicycle, Orb in Orb:**
>
> ***—Milton 1608-1674, Paradise Lost, Bk. VIII***

Today the question has arisen again, with new urgency, but no clear answer has been given. The Chicago Convention of 1944, to which all major powers (except Russia and Red China) are signatories, proclaims that every nation has "complete and exclusive sovereignty over the airspace above its territory." Unfortunately the term is not defined, since, in 1944, there was no obvious need for definition. Most writers agree, however, that there must be some limit, above which national boundaries become irrelevant and space is "free." They propose to relate the area of sovereignty to the atmosphere (and indeed the French version of the Chicago Convention speaks of "espace atmospherique"). But where is the line to be drawn? Atmosphere, in scientific classification, has five gaseous layers of which the outermost is the exosphere, lying above about 235 miles and merging into space. Within these layers, the density decreases with height: 97% of the atmosphere lies within the first 18 miles. The peak of Mt. McKinley (3.8 miles) is above more than half of the atmosphere.

Some writers, like Mr. Haley, would draw the line at the highest altitude at which air-supported craft can fly, about fifty miles up. Such a limit finds some support in the technical regulations of the International Civil Aviation Organization. Others have sought to base the limit on that of the atmosphere. The difficulty is that, depending on which phenomena are considered significant, such a limit can be placed anywhere between 150 and 60,000 miles! The Soviet Union, in recent pre-sputnik days, took an extreme view and claimed sovereignty upward to infinity. It has also been noted that a simple boundary line may not be adequate. On the one hand, it has been suggested that sovereignty should extend as high as control can be exercised from below. This seems to be an analogy to the law of territorial waters; the "three mile limit" was traditionally based on the extreme range of shore-based cannon. But the development of ballistic missiles, which blur the distinction between projectiles and "space craft," would seem to render this a meaningless assertion of "might makes right." Clearly, a doctrine of "if you can shoot it down, it had no right to be there" is not adequate for the development of space. On the other hand, writers like Professor John C. Cooper, a noted authority on aviation law, have suggested that multiple boundaries be drawn. Air space below fifty miles should be within the exclusive sovereignty of the subjacent state, but above this should be a "contiguous zone" extending up some 600 miles, in which other states should have a right of "innocent passage."

In "outer space," however defined, it is generally agreed that there should be "freedom of space." But not all international lawyers have stopped there. John C. Hogan, of the RAND Corporation, has proposed the further terms "solar space" (for the area of the sun's planetary system); "galactic space" (for the area occupied by our galaxy—the "Milky Way"); and "extragalactic space" (for the rest of the universe). Perhaps such terminology will become useful if we encounter extra-terrestrial races and must begin to apply what Mr. Haley calls "Metalaw"—the law governing the relations between intelligent beings from different planets.

The Significance of Sputnik

The launching of the first earth satellite, on October 4, 1957, had legal, as well as scientific and political, importance. In July 1955 the United States had announced that it would launch satellites as part of its program of participating in the International Geophysical Year (IGY). No protest was made by any nation against this proposed use of space, though it necessarily involved the "crossing" of many international frontiers. The Soviet Union not only failed to protest, but announced its intention to send up its own satellites and, as we have seen, did so. Have these *acts*, as legal precedents, established a new role of international law, and, if so, what are its limits?

As to the first question, it may be asked whether the existence of the IGY constitutes a special authorization for present and planned satellites. This would seem to be the only plausible argument against the thesis that satellites, circling the earth at altitudes as low as 150 miles, are legal exceptions to the old rule of national sovereignty of the atmosphere. But argument based on the special nature of the IGY seems very weak. In the first place, there is no international agreement establishing the IGY; all formal cooperation has been on a private, unofficial level. The IGY cannot, therefore, be viewed as establishing a special international legal regime. In the second place, Sputnik I was officially announced by the Soviet Union as being outside the IGY. It was, Soviet scientists announced, a private trial satellite—and thus could properly use radio frequencies other than those agreed on for official IGY satellites. Yet no protest against Sputnik I was raised by the United States or other countries. While no such statement was made by Russia regarding Sputnik II, this second satellite also failed to use the agreed frequencies. Finally, the Russians, appar-

ently abandoning their earlier claims, are reported to have said that the sputniks did not violate other nation's sovereignty because any crossing of frontiers was due to the revolution of the earth, rather than the motion of the sputnik. The Soviets do not claim that the U. S. has violated their rights by unauthorized revolution beneath their satellite.

If a "freedom of sputniks" is conceded, how far does it extend? Is it limited to some form of "innocent passage?" In 1956 the Soviet Union protested bitterly to the United States against certain high-altitude weather balloons passing over Soviet territory. Although the Russians put forward a claim to unlimited sovereignty, it is significant that both the protest and the American reply were couched in terms of the purposes with which the balloons had been launched and their effect on the subjacent territory. According to the Soviet protest, they were designed to photograph Russian territory and also constituted a menace to aircraft and to people on the ground. The United States, though "provisionally" suspending the balloons, insisted on the purely scientific nature, and unhazardous character, of the nominal intrusions. Although Secretary Dulles did not purport to assert an absolute rule of law, and, conversely conceded the impropriety of "putting up into the air anything which could interfere with the normal use of the air by anybody else," he clearly implied that legitimate and safe scientific research should not be prevented by nominal claims of sovereignty! Similar reasoning might be applied to earth satellites.

NOR is there any spot of such a sort that when bodies have reached it, they can lose their force of gravity and stand upon void, and that again which is void must not serve to support anything, but must, as its nature craves, continually give place. . . .— *Lucretius c. 98—c. 55 B. C. "On the Nature of Things"—Book I.*

So far, however, no attempt to so restrict the legal use of satellites has been evident—apart from the American call for international regulation of space. The United States has announced that some sort of reconnaissance "snoopnik," capable of taking recoverable photographs of the earth below it, is being developed by the Air Force. The Russians have announced a project to build a hovering satellite, to relay television programs, which would also seem to have military significance. Yet no protests have been raised, to date, by either side.

Who Pays the Damage?

Though earth satellites constitute a notable exception to the old saying that what goes up must come down, it seems that we can look forward to the possibility of injury from falling sputniks—or at least the remains thereof. This raises the question of whether a nation sending up satellites is responsible for any damage they may cause to foreign territory. Again it is a problem without clear precedents.

If an American were injured by a foreign satellite, or other piece of space equipment, his opportunity for redress would probably be limited to a claim on his behalf by the American government. A foreign government would be protected by sovereign immunity in our courts, and, in all probability, in its own as well. Such a claim would proceed through diplomatic channels, through voluntary arbitration, or, perhaps, through the International Court of Justice at the Hague. But, assuming that the claim is to be judged by international law, would the launching state be liable? We must assume that sending up satellites is lawful.

In 1941 an arbitral tribunal found Canada liable to the United States for damages resulting from fumes emanating from a Canadian smelter and drifting across the border. In domestic law, airlines are frequently made absolutely liable for any injury they cause to persons on the ground. International conventions, signed at Rome in 1933 and 1954, though they have received few ratifications, have sought to extend this principle to private international law. Absolute liability in Anglo-Saxon law may stem from two sources. Under the old common law a person was liable for injury resulting from any trespass, or physical entry, on another's land. That the trespass was wholly accidental, or even justified, was no excuse. Though this concept was partly replaced by a requirement that liability be based on fault, traces of it remain. Mingled with this idea is a newer doctrine that a person who engages in an activity involving an undue risk towards his neighbors should be strictly liable for any injury that results, even though the activity is lawful and commendable in itself. This rule is often applied to such activities as blasting and flying.

Applying some of these concepts to the problem of satellites, it can be argued against finding liability that the likelihood of damage is extremely remote. The chances are that a satellite will be burned up during its passage through the atmosphere, or, if it lands, that it will strike water or unoccupied land. Furthermore, there may be no way in which the launching nation can attempt to prevent the fall, or confine it to its own territory, so that no element of negligence can be presumed. On the other hand, it can be argued that the nation sending up satellites is deliberately subjecting its neighbors to a real, if small, risk, and that it should therefore act as an insurer if damage does result. Perhaps the most likely result, in a real case, would be an *ex gratia* payment of damages, that is, a payment accompanied by a denial of legal liability. When Japanese fishermen were unaccountably injured by an American hydrogen bomb test in the Pacific, the United States made an *ex gratia* payment of two million dollars, while specifically reserving the question of liability. A uniform succession of such payments might well lead to a customary rule fixing liability, despite the reservations made in each case.

The Landing Spaceship

Some of the arguments dealing with the height of sovereignty have already been considered. In the case of earth satellites, or other orbiting objects, there seems some justification for holding them outside the realm of sovereignty since their motion is wholly independent of the atmosphere and of the territorial configurations of the rotating earth below. The space ship, returning to a controlled landing on the earth, may present different problems. According to present day views, such a ship would probably go into a

long spiral glide, bouncing in and out of the atmosphere in order to brake its speed without burning up, and finally descending gradually through the air like a glider. Such a landing method might well require the penetration of foreign air space at relatively low levels, and thus technically violate the area admittedly within national sovereignty. Assuming such a violation to be deliberate, would the "offended" nation be justified, in international law, in shooting down the space ship?

This question points up the difficulty of trying to establish hard and fast rules relating to the upward limits of sovereignty without consideration of technological facts. It seems clear that a nominal claim of sovereignty cannot be used to prevent the development of space travel. International aviation has not developed a right of innocent passage because it was not absolutely essential to domestic air transport or to communications between two agreeing states. That the non-existence of this right can be hampering, however, is indicated by the closing of Israel's land frontiers to aviation, and by the current dispute between Portugal and India over access to the Portuguese territories on the Indian subcontinent. An interesting analogy, pointing towards a right of communication, can be found in international maritime law. While merchant ships are entitled to "innocent passage" through foreign territorial waters, warships are not. Nevertheless, when territorial waters comprise a strait connecting two portions of the high seas, even warships are entitled to pass through them. This doctrine was upheld by the World Court in the *Corfu Channel Case* between Great Britain and Albania in 1946, and has been included in the draft convention on territorial waters proposed by the International Law Commission.

> **"OMNE *mundus in duas partes divisum est*—men who wear rubbers and pay poll-taxes, and men who discover new continents. There are no more continents to discover; but by the time overshoes are out of date and the poll has developed into an income tax, the other half will be paralleling the canals of Mars with radium railways."—*O. Henry in "The Venturers."***

It may seem weak to argue that violation of air space by a space ship is legal because it has to be. Yet this is probably the real reason why the unlimited upward ownership of private landowners disappeared with the coming of aviation. As with aviation, it is probably not too important whether the authorization is accomplished by limiting the area of sovereignty or by the establishment of a right of innocent passage. But, since no express legal doctrine exists, it might be well to provide one by international agreement when the time comes.

In the case of violations of sovereignty by space ships in distress, stronger analogies exist. The right of ships to enter foreign ports in distress, without subjecting themselves to the local jurisdiction, is well established. And although American courts have refused to accord immunity from jurisdiction to planes in distress, a right of landing is generally conceded in practice. The difficulty, which might be multiplied in the case of space ships, is to distinguish a craft having operational trouble from one on a hostile mission.

Before leaving the topic of space ships, it may be well to ask what law governs their operation and passengers. Although this question has often been raised, it seems fairly clear that the laws of the launching country should govern events on board space craft in outer space, just as they do on board ships and, often, airplanes. The extension of jurisdiction to space craft would require national legislation in countries like the United States (which only extended criminal jurisdiction to cover American aircraft over the high seas in 1952), but no international legal problems would seem to exist. As to the navigation of space craft, only experience will show what uniform rules, if any, are needed.

Who Owns the Moon?

Much of the recent popular writing on space law has dealt with the problem of whether the moon might be annexed by one of the great powers. Much of this discussion has sought to show how the first country to reach the moon might by some symbolic act prevent any other nation from making use of it. On the other hand, it is often suggested that the moon be annexed in the name of the United Nations, or otherwise be declared out of bounds for territorial annexation.

In terrestrial law, the rules for claiming territory have become progressively more strict as available *res mullius* became harder and harder to find. The ancient Papal division of the world between the Spanish and the Portuguese was succeeded by the hinterland principle; he who owned the coast could claim inland to an indefinite extent. This formed the basis of the grants to the original American colonies, and, until the last great land-rush of the late nineteenth century, the principle for territorial claims in Africa. The hinterland principle was succeeded, however, by the doctrine of effective occupation; discovery may give some sort of inchoate title, but it must be followed up by "effective occupation" within a reasonable time or lapse in favor of any other state succeeding in occupying the territory. Thus, in 1928, the United States lost the *Island of Palmas* Arbitration with the Netherlands. Although our predecessor in title, Spain, had discovered the island, it was the Netherlands which had effectively established, and continuously maintained, control over it. What constitutes "effective occupation," of course, varies with the circumstances. For a bare rock in the ocean, the planting of flag might be enough; for a fertile country, actual colonization and the maintenance of police and social services might be required. In 1931 the World Court awarded Eastern Greenland, a forbidding and almost uninhabited area, to Denmark on the basis of ancient claims and an occasional patrol.

The polar regions have constituted special problems in international law. The north polar region has been effectively divided up according to the "sector principle." Each nation bordering the region has claimed a pie-shaped slice extending to the North Pole. Although the United States has not officially recognized this system, no country has recently made any serious objections to the claims involved.

Antarctica, on the other hand, is covered with overlapping claims based on both territorial contiguity (as in the Argentine, Chilean, Australian and New Zealand claims) and on the exploration of the coast (as in the claims of European nations). There remains a strong feeling that no territorial claims should be made in the area on such weak foundation, and in practice, except for occasional symbolic acts and protests, exploration has proceeded without consideration of the claim boundaries. During the IGY, outposts of scientists from many countries are scattered over the continent, many of them in the areas of other countries' claims.

When we consider the annexation of the moon, it is first obvious that no nation can claim to have discovered it, in the sense of discovering its existence. Furthermore, the absence of any coastlines (unless we count as seas the dry *maria* of the astronomers) would make difficult the application of any hinterland or sector theory. The standards of "effective occupation" seem almost as doubtful. How does one administer territory without inhabitants to administer? It has been suggested that, while the face of the moon which we see is not available for annexation, the dark side, so far unknown to men, might properly be appropriated. But while the dark side might, in a sense, be "discovered," the problem of occupation seems just as acute.

It seems very unlikely that the first nation to send a rocket to the moon, manned or unmanned, will lay claim to its territory. Certainly, such a claim would not be recognized. Far more likely, perhaps, will be a situation similar to that which exists, in practice, on the Antarctic continent. Each scientific post will be governed by the nation establishing it, without laying any real claim to the territory on which it rests. If exploitable minerals are discovered, then perhaps each state should have special rights in those sites which it actually develops. If more formal arrangements are desired, they should take the form of international ownership proclaimed by the United Nations. But those who fear some unilateral annexation should be reminded that effective occupation includes the ability and will to expel competing foreigners, a process which, under the circumstances, would require war. And if any nation is willing to enforce a moon monopoly by force, it seems doubtful whether international law will be significant in the dispute.

The Future of Space Law

One might speculate indefinitely about intriguing, but increasingly remote, problems of space law. How, for instance, would we conduct diplomatic relations with beings from other planetary systems? When we reach this point, however, tradition offers fewer and fewer suggestions, and one man's ideas are as good as another's.

The immediate problems posed by earth satellites, and their like, have greater reality, and here the extension of traditional concepts of international law may have important results for our national security and foreign relations. Once acts have been allowed to go by unprotested, precedents have been set and it may be very difficult to change the "rule" thus inadvertently established. Law, like nature, abhors a vacuum and, in international law in particular, that which is not forbidden is permitted. Space law will develop with space conquest, whether we like it or not, and it may be wise to consider how it can be guided to suit our needs.

FORMS OF LIFE

I see no reason to suppose that the air about us, and the heavenly space over us, may not be peopled by intelligences, or entities or forms of life, as unintelligible to us as we are to the insects."—Alfred North Whitehead (1861-1947).

"Travel orders or not—somebody's goofed."

EDITORIAL PAGE

Venturing into Outer Space

SIX MONTHS ago outer space belonged to science fiction. Then overnight Sputnik I transformed fantasy into reality. For a while speculation rose that the Soviet Union might have replaced the United States as technological leader of the world. Then the Explorer took its place in space. Now man has settled down, accustomed to having his own creations speeding through the heavens; indeed it does not seem to have affected his life very much.

Man has often made valiant thrusts into the unknown, but never before has he brought forth possibilities of as far-reaching implications as with the crossing of the first frontier of outer space. The first earth satellites are hut pioneer craft, feeling out the power of man's technological might, testing his theories and building his confidence. The satellites of the future will be more sophisticated; packed with instruments and equipment, they will make possible major advances in his understanding of the universe, and perhaps considerable changes in his way of life.

An early major impact of the unmanned satellite may result from its use as a relay point for world-wide radio, television and telephonic communication. Today a television-carrying satellite is under construction which, when launched into orbit, will give a continuous picture of the areas of earth over which it flies. Such a satellite, utilized as a weather observatory, will allow cloud patterns and storm paths to be tracked across the surface of the earth. Recoverable satellites equipped with photographic equipment will be able to map with absolute accuracy the entire surface of the earth, accomplishing in days what surveyors need years to accomplish. Others, orbiting close to the earth, will enble accurate determination of the earth's mass structure, as their paths dip and rise in response to variations in the gravitational pull caused by areas of heavy concentration of mass.

A later step may be the construction of a space station, equipped as a gigantic laboratory and manned by scientists and technicians. In such a station fundamental research could be carried on under ideal conditions now unattainable on earth.

Unfortunately, alongside these peaceful and scientific projections of man's ingenuity into outer space, come military applications of frightening import. The intercontinental ballistic missile which traverses outer space is now a common topic of conversation. Satellites designed for weather reconnaissance and mapping could be used by one nation to detect the military potential of another. Recoverable satellites would provide photographs detailed enough to show aircraft and vehicles on the ground.

The timing of ventures into outer space will depend on the resources made available for their accomplishment. Decisions as to this will be politically made, and the decisions will have political repercussions long after they are made.

One commentator has suggested that mankind may be so bound together by the challenge of outer space that the importance of nationalistic concerns may pale until mankind regains a brotherhood of common purpose. While this is fervently to be hoped, the history of the expansion of Europe into the nearly empty New World after 1492 does not give ground for optimistically assuming that men will not simply extend their earthly divisions into the new space frontier. For the immediate future, man's penetration into the near regions of outer space has created new problems and challenges for United States foreign policy. These problems will grow and multiply and will repeatedly challenge us anew.

In 1945 the United States faced a similar problem and a similar challenge. We made a serious and detailed proposal, known as the Baruch Plan, to ensure that atomic energy be used for peaceful purposes only. That Plan was adopted by the United Nations, but years of negotiations proved that the Soviet Union was unwilling to accept this objective and the controls it involved. We had no alternative but to move ahead and develop the atomic and hydrogen bombs.

That lesson has been a costly one for mankind. The United States believes that the world must move decisively and quickly to establish controls to ensure that outer space does not become a newer and more terrible potential battleground. President Eisenhower has proposed to the Soviet Union that we agree that outer space be used only for non-military purposes. Unfortunately, the first reaction of the Soviet Union to this proposal has been a negative one.

While this Soviet attitude is entirely consistent with the forty year record of Soviet history, and is, therefore, not surprising, this very fact makes it all the more incumbent upon Americans and the people of other free nations to devote maximum ingenuity to devising ways of making the space age more of a blessing for men and less of a curse.

Service Glimpses

1. Caracas. Before U. S. Ambassador Dempster McIntosh left Caracas to become manager of the Development Loan Fund of ICA, he was given a farewell reception. Shown left to right: Miss Josephine Munoz who is secretary to the Counselor for Economic Affairs, Harlan P. Bramble; Ambassador McIntosh; Miss Dorothy Hines of New York City.

2. Benghazi. Ambassador and Mrs. John L. Tappin prepare to fly back to Tripoli at the conclusion of their farewell visit to Cyrenaica. Among those gathered to say goodbye at Benghazi's Berka II airstrip, were, left to right: Muhammed Salah. Arab secretary; Mrs. H. H. (Jane) Stackhouse; Mrs. A. P. (Stuart) McNeill; H. H. Stackhouse, acting Principal Officer; A. P. McNeill, Benghazi Administrative Officer; Abdullah Mutardi, the Ambassador's chauffeur. The children are, Allison McNeill at the left and Jan and Lynne Stackhouse.

3. Rio de Janeiro. Ambassador Ellis O. Briggs greets Louis Armstrong and Mrs. Armstrong at a reception at the Embassy residence honoring the entertainers. Standing between "Satchmo" and his wife is Brazilian impresario, Dante Viggianti.

4. Basel. John A. Lehrs, American consul at Basel, Switzerland since 1941, retired from Foreign Service after reaching the age of 70. He is shown here on bis final official visit to Ambassador Henry J. Taylor, when the American Embassy staff in Berne, presented him with a silver tray. Left to right in the picture are: Harry Bardach; Elias Alfred McQuaid who is replacing Lehrs in Basel; Anthony Clinton Swezey (since transferred to Washington); William L. Blue; Ambassador Taylor; Burton Lifeschultz; Mr. Lehrs; Robert M. Beaudry; Loren L. Goldman; Carl H. Peterson; E. Allen Fidel.

5. Kirkuk. Consul Lee F. Dinsmore received a group of nearly two hundred from the local and foreign communities at tbe opening of the first American Consulate in Kirkuk. The U. S. has been represented there with a USIS office since 1952. With increased interest in northern Iraq, the Department decided to open the Consulate as a service to the expanding American community. Ambassador Waldemar Gallman attended the opening ceremonies.

6. Leopoldville. Julius Holmes, Special Assistant to the Secretary of State, is shown leaving the new Consulate General and USIS building with other officers during a recent visit to Leopoldville, Belgian Congo.

7. Barcelona. The staff of the Consulate General and USIS gathered for a farewell to Consul General and Mrs. Milton K. Wells (center) just before the Wells left for their new post at Bogotá where Mr. Wells will be Deputy Chief of Mission.

1

2

3

4

5

6

7

Looking Back:

Highlights of 1960-1999

by S. I. NADLER

1961 THE THIRD WOR(L)D WAR:

By the end of 1960, more than a million public opinion surveys had demonstrated clearly that 194% (most respondents insisted on answering twice, for emphasis) of Earth's population did not want another war. Heads of state felt the same way, knowing that another world conflict would prove almost totally destructive, a side-effect of which would be a permanent dent in the head-of-state profession. A major war was, nevertheless, inevitable: commentators of all nations said so.

Looking back, what transpired was inevitable, but it came as a great surprise at the time. The conflagration was sparked at Summit Conference No. 28-B in Paris. Conrad Plath, a CBS news analyst, and Radio Moscow commentator Igor Blastov got into an argument. After a brief exchange of sharp words, Plath (or Blastov) threw a short right to the nose. Blastov (or Plath—accounts differ) countered with a fast left hook to the ear. The Third Wor(l)d War had begun. NBC, the AP, and the UP fell in quickly with CBS, and TASS, NCA, and Radio Peking came to the assistance of Radio Moscow. Reuters, Agence France Presse, MENA, and other media throughout the world (Earth) pitched in.

The war lasted only five days, during which period no news was reported, much less analyzed or commented upon. Heads of state found themselves reaching their own decisions, and men in the streets discovered that they could make up their minds about all sorts of things without broadcast or syndicated guidance. When the warring factions realized what was happening, an immediate truce was concluded. Both sides, however, lost. No longer could they commentate, pontificate, or obfuscate. From that day on, news gathering agencies and personnel have been restricted to the gathering and reporting of news.

1970 THE GREAT INTERPLANETARY TRAVEL SCANDAL:

Using animals as passengers, Goddard Strawn proved conclusively that he could successfully send human beings to (and safely land them on) the Moon. Hundreds of thousands asked to make the trip. Strawn selected fifty individuals, all universally known and disliked. (Asked why he had chosen these particular people, Strawn shrugged and quipped, "That's the way the Vehicle disintegrates.") Within three weeks, all fifty had been safely rocketed to the Moon.

A month later, the great scandal broke. A reporter casually asked Prof. Strawn when and how he intended to bring back to Earth the fifty pioneers on Moon. Strawn, seeming genuinely surprised at the query, replied, "Who intends to bring them back? It would make the whole operation pointless!"

1978 CONQUEST OF THE WEATHER:

Man's conquest of the weather, coming as it did in 1978, coincided with the winning by the Washington baseball team of its first pennant in what seemed several generations. In the ensuing excitement, the Weather Bureau scheduled rain for the opening day of the World Series. This was hastily corrected, resulting in the now-famous announcement: "Rain postponed on account of game."

1985 THE LAST "MISS UNIVERSE" CONTEST:

The "Miss Universe" contest in 1985 was opened for the first time to contestants from worlds beyond Earth. It also turned out to be the last "Miss Universe" contest. Inhabitants of Earth started what almost became an interplanetary hassle when Miss Mars was selected as the winner and Miss Earth as runner-up.

The judges explained that, since Miss Mars and Miss Earth were equally matched in beauty, they, the judges, had decided the contest on the basis of legs. "Weren't their legs also equally beautiful?" demanded an irate Earthling photographer. Agreeing that such was the case, the judges then pointed out, with irrefutable logic, "But Miss Mars has three of them!"

1992 THE GREAT MEDICAL BREAKTHROUGH:

Dr. Wynn Salem, whose birthday is annually observed throughout the Universe as a legal holiday, had been experimenting for thirty years when he made the Great Medical Breakthrough in 1992. Had he contented himself merely with discovery of the common-cold vaccine, Salem's claim to eternal fame would have been assured. But he went further, developing an all-virus vaccine which could not be taken either orally or intravenously. Nor were one or two doses sufficient; the vaccine has to be taken several times daily throughout life. Tasteless and odorless, it must be self-administered by inhalation with cigarette smoke.

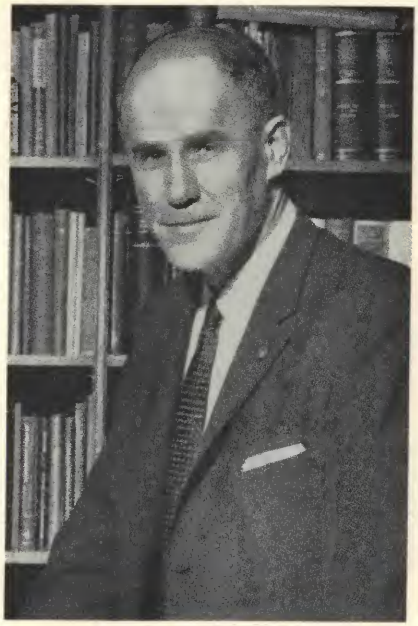
1998 FIRST AMERICAN EXTRA-TERRESTRIAL AMBASSADOR:

N. Delmore Worth, a career officer, was appointed the first American ambassador to a planet beyond Earth early in 1998. As American Ambassador to Venus, he was also accredited to the satellites (natural) of Venus. His space ship blasted off March 4. Unfortunately, it lost thrust before breaking out of Earth's gravitational field and went into orbit. Since there was no way of getting Worth either to Venus or back to Earth, he was appointed Special Roving Ambassador.

In the late spring, on clear nights, Worth may be seen about twenty degrees above the horizon traveling southwest to northwest.

Science and Diplomacy

by G. Edward CLARK



Dr. Wallace R. Brode, Science Adviser

ON JANUARY 13, 1958, Dr. Wallace R. Brode, former Associate Director of the Bureau of Standards, professor and researcher in the field of chemistry, wartime liaison officer in Paris for the Office of Scientific Research and Development, and internationally renowned scientist, was appointed Science Adviser to the Secretary of State. Dr. Brode, in filling a post which has for some time been vacant, will advise the Secretary and other Department officers on foreign policy matters relating to scientific developments and will direct the work of science attachés overseas at posts once occupied and for some time planned, but at the moment unfilled.

Dr. Brode's appointment gives fresh impetus to a postwar Department of State function which had grown out of an American mission established in London to arrange the sharing of captured German military and industrial data. In 1950, a distinguished group of consultants and advisers under the chairmanship of Dr. Lloyd V. Berkner, in a report entitled *Science and Foreign Relations*, cited the need for a science adviser in the Department and science attachés in certain embassies abroad. The report pointed out the growing impact which scientific activities were exerting on foreign relations. It emphasized accordingly the necessity for officers with scientific background to work side by side with political, economic and other officers in carrying out the business of the Department and the Foreign Service. (The original assignment of attachés at a number of missions abroad, the basic precepts of their programs and the work of the Science Adviser's office in its initial phase have been ably described by Walter M. Rudolph (assistant to the Science Adviser) in an article "Science . . . in Foreign Relations" appearing in the July 1954 issue of the FOREIGN SERVICE JOURNAL.)

Timely Development

The appointment of Dr. Brode, along with the release by the Department of plans for assigning of new attachés abroad, has been accepted as a welcome adaptation of the Berkner recommendations and of the earlier Departmental program to the international requirements of the present age. As a member of the National Academy of Sciences, the American Chemical Society and many other scientific organizations, Dr. Brode is eminently qualified to carry forward the science program. He was recently elected President of the American Association for the Advancement of Science. He has served as United States member on a number of scientific delegations at assemblies both in this country and overseas, being proficient in a number of foreign languages. He has contributed numerous articles for chemical and other scientific journals, especially in the fields of organic synthesis, optical resolution, color and chemical constitution, absorption spectra and emission spectra.

Professional reaction to the appointment of Dr. Brode and the revitalization of the Department's science program has been universally good. "Scientists everywhere applaud the State Department's action in reviving the science attaché program," said the CHEMICAL AND ENGINEERING NEWS in a January 20 editorial, "and are especially pleased that Wallace R. Brode will head it. He has their complete confidence and respect and will be able to recruit a competent staff."

Press reaction throughout the country has also shown satisfaction at the Department's action. Typical editorial comment is that of the Portland (Maine) PRESS-HERALD

G. Edward Clark is currently executive assistant to the Ass't Secretary for Administration and is working on special projects. He has been appointed to the next session of the National War College.

TELEGRAM, which said on January 17: "A welcome tidbit of news from Washington says that the State Department is reviving plans for maintaining science attachés in the missions to countries where the contacts will do the most good. Welcome, too, is the news that the vacant post of science adviser to the Secretary is about to be filled."

Program Plans

The Department is providing for the assignment or reassignment of science attachés in Paris, Bonn, Stockholm, Rome, New Delhi, Tokyo, London and certain other locations, in addition to providing staff to the Science Adviser in the office of the Secretary of State. Dr. Brode hopes that each attaché ultimately will have at least one professional assistant, plus clerical help, and that the number of posts will be increased in the next fiscal year. Each attaché will operate primarily in the country of his assignment, but he will be available to neighboring missions whenever the need arises.

Dr. Brode conceives of the attaché's relation to chiefs of mission, just as his own relationship to the Secretary, as primarily advisory. Attaché's will collaborate and advise with political, economic and other Embassy officers on those foreign relation questions in which scientific considerations play a part. A science attaché is not an intelligence collector. "He is not a mailchute," said Dr. Brode, who likes the phrase used in the Berkner report, that the State Department should be "the catalyst, not the broker" in exchanges of technical information. The new Science Adviser also agrees with the Berkner report which urged that the Department encourage the flow of technical and scientific information but warned that the Department "should not interpose itself between the scientist and the achievement of his objective or the free flow of information."

The Science Adviser and science attachés will in the future, as they have in the past, assist other Federal agencies and private groups such as the National Science Foundation, the National Academy of Sciences, the International Cooperation Administration, etc. Attachés, on behalf of chiefs of mission will have some representational responsibilities, will assist visiting scientists and scientific delegations, will, like other members of the Foreign Service, keep the Department currently informed of developments significant to international relations and will, when so designated, participate in international meetings and conferences.

Perhaps because of our geographical isolation or for other reasons, Dr. Brode feels that the United States often does not have a very large voice in international scientific circles. "I believe that our professional reputation must be increased," says Dr. Brode, "not only by our achievements but through proper representation in gatherings of each of the important disciplines. We must not be conspicuous by our absence." Increasingly important sub-divisions of the major disciplines are being organized daily on a private, international scale, Dr. Brode points out, and we should encourage our own scientists during their initial participation in such new groups as the International Rocket Society and a new society of bio-chemists.

What are the issues, what are the subjects, what are the problems in the fields where science and foreign affairs meet and with which the Science Adviser and science attachés may be concerned in the future? On the basis of past experiences and in contemplation of the years ahead, Dr. Brode and others visualize an ever increasing range of topics where scientific considerations will enter into the conduct of foreign affairs.

Typical of the collaboration between scientists and diplomatic officers is work on the Law of the Seas. For a number of years geographers, geologists, oceanographers, international lawyers, naval personnel, and representatives of the State Department and various foreign governments have been preparing for a series of international conferences on the Law of the Seas. Major problems face the countries of the world in regard to territorial waters, continental shelves, etc. Fishing rights, oil rights, trade controls and many other matters are directly related to scientific findings beneath the oceans of the world.

Again, through treaties and other diplomatic arrangements the United States is cooperating with Mexico and Canada in scientific research in the field of contamination. Productive studies have been carried on for a number of years along the Canadian and Mexican borders on the subjects of air and water pollution.

The International Geophysical Year, in and of itself, has called upon the Department to blend the objective of the scientists' plans with the objectives of our foreign policy. Details for cooperative meteorological projects with South American scientists have been worked out amicably with scientists and foreign governments. Arrangements, satisfying at once scientific needs and diplomatic requirements, have been made with Canada for rocketry studies. Scientific progress emanating from the International Geophysical Year will doubtless open new vistas, while the new knowledge about such matters as the earth, the atmosphere, and space will give rise to intergovernmental problems which today can only be dimly envisioned.

Meteorological progress will likely bring better techniques for weather prediction, giving rise to new international problems. In the extreme possibility, the control of weather may be attained. If, as some authorities now predict, a nation can, with sinister motives in mind, effect major changes in the weather over other countries, the strategic and political implications are awesome. Conceivably, meteorologists might influence temperatures, precipitation and other conditions which could destroy agriculture, harm all forms of life, make rivers unnavigable, render streams

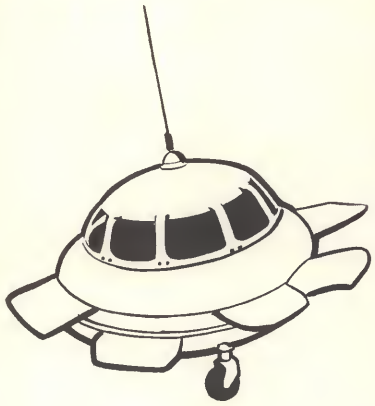
Milestones in History

DISCOVERY of fire
Invention of the wheel
Invention of writing
Beginning of scientific questioning (Thales and the Greeks)
Beginning of experimentation (Archimedes)
Age of astronomical comprehension (Copernicus)
Founding of experimental physics (Galileo and Newton)
Invention of the steam engine
Discovery of electromagnetism by Faraday and Gersted
Liberation of atomic energy*

*From "The World Book Encyclopedia," Field Enterprises, Inc., Chicago.

useless for the production of power and hamper military operations.

Atmospheric studies will doubtless provide new knowledge on navigation and communication. Technical provisions in treaties and intergovernmental agreements covering such items as ship and plane travel and navigational equipment and facilities will likely have to be modified. New techniques for radio and radar communication and other advances in the field of electronics will almost certainly give rise to problems of intergovernmental relations, and will require the combined efforts of scientists and diplomatic officers to work out practicable and amicable solutions which will utilize scientific progress and at the same time preserve national objectives.



It has been implied throughout this article, if not specifically stated, that science and foreign affairs must also work in close partnership with the military. Dr. Norman Ramsey, Professor at Harvard University, has been appointed NATO Science Adviser. It is assumed that the Science Attaché in our Embassy in Paris will work closely with Mr. Ramsey and with the American representative on the NATO Science Committee.

Many fundamental questions of space and space control will need answers from both scientists and foreign affairs specialists and will have to be worked out jointly. "Space," points out Mr. Rudolph, "may be a scientific concept, but 'control' is a political one. Scientific and political minds must meet on this issue." "People in talking about 'space control' often think of space above us," observes Dr. Brode, "but we have scientific and political problems in other dimensions. How far down can we dig or drill and stay within national sovereignty? If we dig straight down, then how far could we reach out, perhaps under borders, and tap natural resources? What are our rights in the Antarctic?"

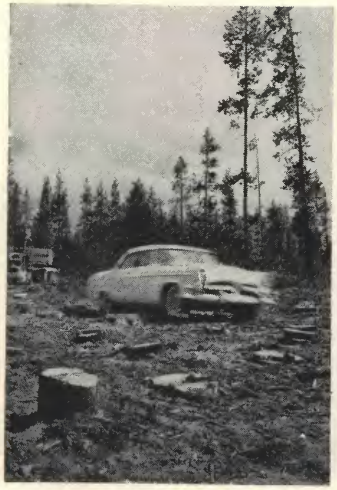
Science attachés played a significant role in the development, presentation and implementation of the Atoms for Peace Program. There is talk now of an international Science for Peace program and Dr. Brode expects that he and the science attachés might assist U. S. participation in such a program if it comes to fruition. The President regards such a program as a powerful instrument to promote peace and "to reap the greatest rewards from man's scientific discoveries."

With all due credit to participation in dramatic developments, however, the soundest accomplishments of the scientist-diplomat team will occur in the day-to-day work of foreign affairs. It will be through the word of advice injected into a Secretarial briefing paper, the chairing of a meeting of scientists (governmental and private) gathered to consider the international implications of a finding of an International Geophysical Year team, a hiking trip with a German geologist, or the submitting of a significant item for an Embassy Newsletter wherein the Science Adviser and the Attaché, over the long haul, will most constantly and consistently help science and foreign policy move forward together in a world at peace.

To Make Discoveries

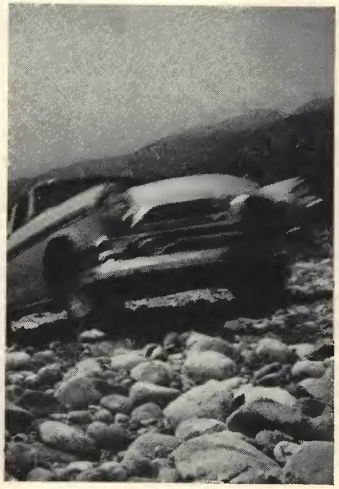
"Gentlemen, a ship was fitted out from England before the commencement of this war to make discoveries in unknown seas under the conduct of that most celebrated Navigator and Discoverer Captain Cook. This is an undertaking truly laudable in itself, because the increase of geographical knowledge facilitates the communication between distant nations and the exchange of useful products and manufactures, extends the arts, and science of other kinds is increased to the benefit of mankind in general. This, then, is to recommend to you that should the said ship fall into your hands, you would not consider her as an enemy, nor suffer any plunder to be made of the effects contained in her, nor obstruct her immediate return to England."—*from "Changing Patterns—American Civilization," University of Pennsylvania Press.*

STUMPS! JACKHAMMER! JAGGED ROCKS!



Stronger on the inside! We tried to wreck these triple-tough tires in an 8-hour run at 30 miles per hour. But we couldn't break a single 3T Nylon Cord!

Over two million blows! A giant jackhammer used to break concrete pounded this tire unceasingly for 34 hours. Not a single 3T Nylon Cord broken!



Over jagged rocks! These tires made this torture run more than 1,000 times! Not one cord broken. That's the miracle strength of 3T Nylon!

Only one tire could take punishment like this—Goodyear's triple-tough 3T Nylon Cord tire!

...and that means safe, trouble-free driving for you!

We never *did* find out how much brutal punishment these amazing Goodyear 3T Nylon Cord tires could take. For not one of these grueling tests could break a single 3T Nylon Cord!

The secret: This nylon cord is preconditioned in an exclusive Goodyear process involving precisely controlled Tension, Temperature, and Time. The result: *Triple-tempered* 3T Nylon Cord.

That's the inside story, but there's extra safety on the outside, too. Goodyear's Twin-Grip design, with two fully independent tread surfaces, gives you up to 24% more traction for safer stops, fast and easy getaways. See your Goodyear dealer for full details.

3T NYLON CUSTOM SUPER-CUSHION

(tubetype or tubeless)

GOODYEAR

THE WORLD OVER, MORE PEOPLE RIDE ON GOODYEAR TIRES THAN ON ANY OTHER MAKE!

WASHINGTON LETTER

by Gwen BARROWS

"*At so distant a place*"

Mallarmé, in one of his poems wrote

> "all reality is dissolved except in the heights perhaps
> at so distant a place that it fuses with infinity
> above human interest"

and certainly the very face of reality has changed during the past six months as never before. For years the scientists had been working in this new realm. Now we are having a look too, and an awesome thing it is. Many have not the eyes to see, some have glimpsed the awesome sight and, unsteady, have turned away. But the future is already with us, as Ley wrote poetically in his Rockets book.

Early last fall the then JOURNAL's Board Chairman, in the course of his assignment in Policy and Planning, attended several of the rockets and missiles launchings and scientific meetings, including the Scientific Advisory Board meeting of the Air Force which met at Chandler, Arizona. He decided the time was ripe for the JOURNAL to have an issue devoted largely to the Foreign Service in Space and asked Wernher von Braun and Eric Weinmann to do articles for us for the April issue.

Rob McClintock (now Ambassador to Lehanon) wrote von Braun last September: "I am one Foreign Service Officer who is convinced that ultimately the Department of State will have divisions covering our relations with planets in space similar to the present geographic bureaus which handle our relations with Europe, the Near East, Asia and Latin America." In February this year the Department, never one to waste funds on unrealistic projects, had already appointed Phil Farley as Outer Space Officer, and Dr. Wallace R. Brode as Science Adviser.

Andrew G. Haley, whose article appears on page 42, was one of the earliest advocates of Space research. He became interested in rockets while helping German scientists find refuge in the United States during the Nazi persecutions. One of his clients was a sister of the noted Hungarian-born aerodynamicist, Dr. Theodore von Karman, and it was with von Karman that Haley organized Aerojet—one of the largest producers of rockets. Haley who has been a Space lawyer since 1942 is an advocate of "Metalaw," the law that may some day govern the relationships between intelligent beings of different natures. Mr. Haley feels that in Metalaw the Golden Rule may not work and that the first principle may well be "Do unto others as they want to be done unto."

Wernher von Braun was in his twenties when he launched the first German V-2 rocket at Peenemunde. Since that first launching in 1942, von Braun has become best known for his work at the White Sands Proving Ground and with the Redstone Missile. To the initiate, von Braun's dream of the manned space station is immensely challenging. Arthur C. Clarke says in his book "The Making of a Moon":

> "In the early 1950's more and more attention began to be focussed on artificial satellites. . . . The advocates of ESV's (Earth Satellite Vehicles) fell into two distinct camps; one contained Dr. Wernher von Braun, while the other contained practically everyone else. This was not quite so unequal a division as it might seem at first sight, and . . . Dr. von Braun was able to make a large fraction of the United States extremely satellite conscious. . . ."

Dr. von Braun's thesis that a manned space station could be used not only as a scientific observatory but as a launching base for atomic missiles is expounded in his book, "Across the Space Frontier."

From an early sixteenth-century woodcut of the Universe, showing Man thrusting his head through the starry Firmament into Infinity.

Without a doubt the JOURNAL has in its pages this month some of the most illustrious names of its entire career of thirty-five years. We will be glad to have comments from the field helping us to explore further aspects of space and diplomacy for which this issue can furnish only a springboard.

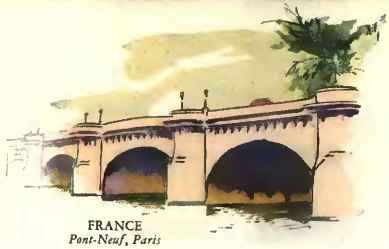
Into Outer Space

According to the Chinese Ambassador, Hollington K. Tong, the Chinese shot a man into outer space "several thousand years ago with fire crackers" but for most of us it's something rather more recent. Three years ago we wrote a piece about Dr. Stuhlinger's butterfly machine which was designed to make the trip across the solar system to Mars. The German rocket specialist who has been working in this country since World War II, designed a craft which would carry a crew of ten, would weigh 250 to 300 tons (about the weight of a modern American railway passenger locomotive) but unlike the locomotive which was the design for Jules Verne's celestial trip a century ago, the Butterfly would start not from the earth on its two year trip but from a space platform.

Three years ago, too, with many other New Yorkers we bought acreage on the moon. Two lots, in fact, complete

(*Continued on page 40*)

SPAIN
Roman Aqueduct, Segovia



FRANCE
Pont-Neuf, Paris

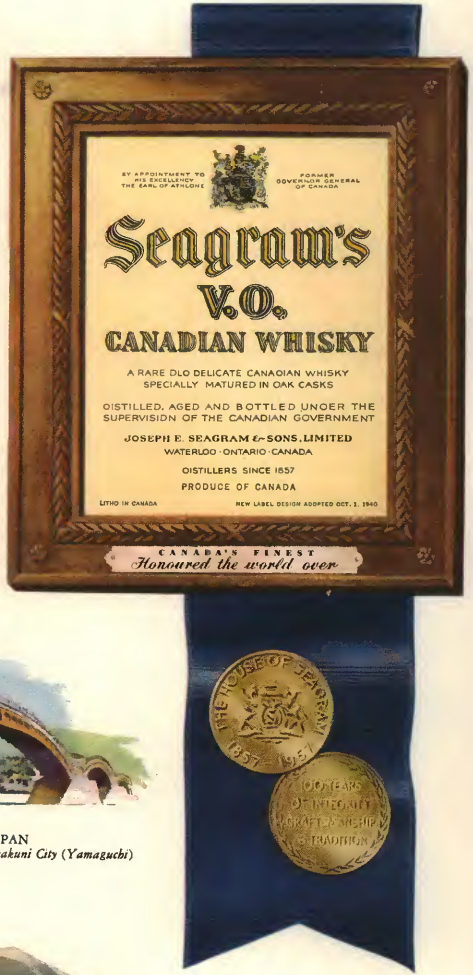
U.S.A.
Golden Gate Bridge, San Francisco

ITALY
Rialto Bridge, Venice

Throughout the world

more people buy **Seagram's V.O.**

than any other imported whisky.



ENGLAND
Tower Bridge, London

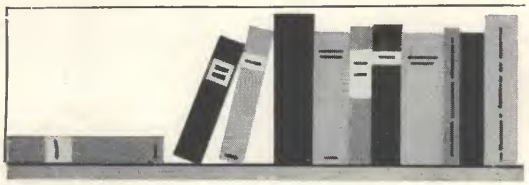
JAPAN
Kintai-Kyo Bridge, Iwakuni City (Yamaguchi)

BRAZIL
Florianopolis Bridge

SWITZERLAND
Landwasser Viaduct, near Filisur

VENEZUELA
La Guaira Highway Bridge

AUSTRALIA
Sydney Harbour Bridge



From Our Bookshelf

"Rocket," *by Air Chief Marshal Sir Philip Joubert de la Ferté, Philosophical Library, New York, 1957. 190 pages. $6.00*

Reviewed by G. EDWARD CLARK

For the student of recent history, Air Chief Marshal Sir Philip Joubert de la Ferté in his book "Rocket" presents a reasonably interesting chronology of rocket development, particularly in the military field. Considerable emphasis is given, quite understandably from the point of view of the author's own experiences, to German experimentation and exploitation of rockets as tactical weapons in World War II. Technical discussions of rocket manufacture and professional descriptions of their use in the European Theatre of Operations should provide serious students of this subject with useful background information.

When Sir Philip leaves the historical and attempts to prognosticate in regard to the role of rocketry in future world affairs his presentation, and perhaps his basic theses pertaining to NATO, "The Shape of Things" and "The New Look," open themselves to serious challenge on a number of scores. While it is interesting to note that the British, like ourselves, are facing problems of service integration, rapid outmoding of weapons and similar issues, the author includes little information which might assist the United States in solving its own problems. The reader may also be discouraged by recurring implications that many of Britain's current strategic problems have been generated by American foreign policies. Typical of such accusations is this statement:

> "The policy of the United States, which is directed to the disruption of the old colonial empires, has been highly successful in the case of Holland, a country that surely should have been treated with great sympathy; fairly successful with Britain; and now approaching a major success in the case of France."

It would appear that some of the book's usefulness as a technical or professional document has been destroyed by such meanderings in political philosophy or by other plainly irrelevant material. "Rocket" would contribute some useful data to a technical library.

The Great Deterrent *by Marshal of the RAF, Sir John Slessor, G.C.B., D.S.O., M.C., published by Frederick A. Praeger, New York, 1958, $6.00.*

Sir John has addressed himself in this book to the "younger officers of the three fighting services who are at that stage in their careers when they begin to take an interest in the fascinating study of strategic policy and international affairs in this nuclear age."

There follows a selection of lectures and articles which constitute a most interesting insight into the evolution of thought of a leading professional soldier and strategist as he has moved from the era of World War I into the rise of air power, mechanized warfare, and finally the nuclear age.

Sir John is clearly a good friend of the United States and as such he does not hesitate to chide us gently and to prod us ever onward into a greater realization of the world responsibilities that have been thrust upon us. He unfailingly speaks more in sorrow than in anger of what he regards as our mistakes, somewhat as an elder brother speaks of a younger brother who has struck it rich and is inclined to forget his family duties.

It is difficult to summarize what Sir John has had to say over the years, in part because there is a good deal of repetition of broad principles, with only minor variations as the years have passed. He would place principal reliance today on the mutual deterrence of nuclear weapons to prevent all-out war, but he believes the Free World cannot afford to abandon its capabilities for dealing with situations short of all-out war.

Sir John advocates a kind of disengagement in Europe and the assumption by West Germany of greater responsibility for its own defense. His program would lead ultimately to the withdrawal of U. S. and British forces from the continent of Europe, but only with a guarantee by the United States to use its nuclear power to punish any major Soviet aggression. He would at the same time make clear that in no circumstances in the foreseeable future would United States bases be withdrawn from the United Kingdom or "elsewhere on the periphery outside Continental Europe." Any disarmament plan must, he believes, include a foolproof inspection system; and nuclear disarmament would be a last step instead of the first. After establishing a *cordon sanitaire* in central Europe, Sir John would propose three great mutual security agreements, ultimately to be adhered to by both sides in the cold war, under which an attack against any state would be an attack against all others. These agreements would embrace Europe, the Middle East and the Far East.

It follows that Sir John believes that United States Far Eastern policy is unwise. He would apply the principle of *cordon sanitaire* even here and come to terms with Communist China in an area non-aggression pact. His "package deal" would include admission of Communist China to the United Nations.

It is not the purpose of this review to enter into a debate with the author but it is impossible to determine how he arrives at the conclusion that the Free World would be better off instead of worse off by yielding to Communism some of Communism's principal goals and then relying on new Communist promises and new deterrent threats to keep the peace.

Sir John has broad and sweeping solutions for virtually every major political and military problem plaguing the world today. His unconcern for the details of these problems is often breathtaking. The Foreign Service Officer engaged in day-to-day struggles with bits of these same problems will likely feel that the author has been breathing that rarefied atmosphere that confines itself to the making of policy while eschewing its execution.

Chile, through Embassy Windows, *by Claude G. Bowers. Simon and Schuster, N. Y. 375 pages. $5.00.*
Reviewed by CHARLES F. KNOX, JR.

Ambassador Bowers' last book (he died a few weeks before the English edition appeared for sale) is a mirror that reflects a unique personality and a wise and kindly man. It is a "beau geste" that gently closes a long and immensely useful life. The pungent draughts of perception that peppered his earlier political writings, the strong drink of his brilliant and notable histories (he published ten) are here mellowed into the wine of tolerance that delightfully opens the door on every phase of Chilean life, and of life in Chile. In his fourteen years as Ambassador in Santiago, Mr. Bowers came to know the country, and its people, as few foreigners have ever done.

Mr. Bowers was first personally exposed to Spanish culture late in life when he served as Ambassador to Spain from 1933 to 1939. If, as he indicated to those who knew him, he was infatuated with Spain, it is obvious from this book that he was in love with Chile. The range of his interest was all encompassing, the mood of his writing is one of affection, the style gentle and witty, the understanding deep. And yet, throughout, the reader is always aware that Mr. Bowers was an American from Indiana and an Ambassador of the United States in the great tradition.

In writing this intimate and revealing book Mr. Bowers has done Chile a great and final service. He has presented to his fellow citizens at home a deeply human and fascinating picture of Chile and the Chileans that will contribute greatly to a better understanding between the two democratic peoples. It is no small wonder that the Spanish edition is a current best seller in Chile. The English edition deserves to be a best seller in the United States.

Charles Knox spent 4½ years in Chile as a Foreign Service Officer. He is now economic adviser to the Chilean government and spent six months in Chile last year.

The Institutions of Advanced Societies, *edited by Arnold M. Rose, published by University of Minnesota Press, Minneapolis, 1957. 670 pages. $10.50*
Reviewed by HERMAN POLLACK

Professor Rose, in collaboration with an international roster of distinguished sociologists, presents in this text brief (75 to 100 pages each) surveys of the social structures and institutions of the United Kingdom, Australia, Finland, Poland, Yugoslavia, Greece, Israel, France, Brazil and the United States. Although the coverage is not identical in each instance, generally speaking political, religious, family, educational, cultural and economic institutions are discussed. Given the limitations of space, the national surveys are necessarily sketchy and broad-brush in approach. Although several are ponderously written, they are nevertheless, on the whole, of a high order.

According to Dr. Rose this, the first textbook published in the United States on social institutions, is intended for use in college sociology and social science survey courses. Anyone working in the field of international relations is likely to find something of interest in this syllabus of national institutions; perhaps Francois Bourricaud's discussion of individualism in France or Jan Szczepanski's appraisal of the influence of Stalinism on the institutions of Poland. However, because of its limited scope and the brevity of its treatment, the book will not be of great utility to the officers of the Department of State and the Foreign Service.

Space and the Man

MY EDUCATION in outer space affairs began very recently. Having had difficulty with geometry in prep school and having barely passed "The Romance of Chemistry" at college, I could never boast of scientific prowess but now I am no longer profoundly and inarticulately ignorant.

My education in outer space affairs began—as it should for any Foreign Service Officer having an appreciation of his representational responsibilities—at a party. The group included twins, aged nine, clad in dungarees and sweat shirts. Their highly-decorated cowboy boots had been stowed neatly in a corner in the interests of the hostess' furniture.

After a certain interval the chatter of the adults grew boring for the twins. Moreover, since it was Saturday night, their week's wages were burning holes in their pokes. Suddenly they resumed their boots and disappeared into the blue and their reappearance, after a short interval, with "Mystery in Space" and "Space Trip to the Moon" explains both my downfall and my greater knowledge of outer space.

I discovered that "ionosphere" and "stratosphere" are words that nine-year-olds come across daily. They showed me that the flash spectrum is:

> "a two to three second phenomenon that can be detected only during a total solar eclipse. Just after the sun's photosphere is hidden by the moon, the outer solar atmosphere appears as a very narrow bright crescent along the edge of the dark moon."

They know that one of Charles A. Young's "extra-solar accomplishments" was his "notable discovery that the disk of the planet URANUS has a decided ellipticity of about one-twelfth." Nor for them, is there anything strange about the stars and sun shining together in outer space. It has been explained as

> "simply that down on earth, the atmosphere scatters and diffuses sunlight, and the glare hides the stars, which are always there. But up here, in open space, the sun's glare doesn't dim the stars."

They have absorbed the concept of free fall. They know about the blue clouds of Mars and can tell you with confidence that "near the Martian Polar Circle the winter temperature at noon is in the neighborhood of —20° C" and that "when blue clouds hide this area, the temperature dips to —40° C."

No longer do I need to refer to textbooks or pore over the encyclopedia. For the reasonable sum of ten cents I can not only keep up with my youthful peers but I can slough off the problems of today in contemplation of vividly odd creatures cavorting in outer space comics.

—W. T. M. B., Jr.

Washington Letter *(from page 36)*

with fishing and water rights, and deeds thereto. One of the men most responsible for this interest in moon trips, and who helped to start it all, is G. Edward Pendray who said recently he thought when the American Rocket Society was founded that there would be a colony on the moon by now: "It is something that will change the life of all of us, our physics, our society and culture, our attitudes, our politics, possibly even our forms of religion. Man is beginning to fulfill his destiny."

Washington Letter

Fashions in Space

On the inside back cover this month we are printing some of Ed Fischer's fashions for outerspace. A good friend of the JOURNAL, Ed Fischer has contributed some unique drawings to our pages, ranging from the frogs with which he illustrated Ambassador Briggs' piece last summer, and the fleas for Abu Majub, last fall, to the banquet table in Bob Rinden's piece "Dear Dead Days Recalled" last month. As a student at the Bauhaus, Ed studied with great masters like Paul Klee.

After we asked for ladies' fashion notes in space we found the following terse remark on our desk, from Hester Henderson:

> Only the bootmaker seems to have anticipated the need for SPACE fashions. (We saw advertised "Cloudhoppers")
>
> There's some indication that the chemise look may have been prompted by a sub-conscious realization of the need for loose garments in a rare atmosphere (where the body tends to expand)
>
> Flat figure definitely in vogue (Reduces friction)
>
> Entirely new line of cosmetics (including more moon-glow items)

Mrs. Henderson is leaving this month, after two and one-half years service on the JOURNAL as editorial and advertising assistant, and her talents and presence will be much missed. Her husband, John W. Henderson, is being appointed Deputy Principal Officer at Singapore following completion of his course at the National War College this summer.

International Cooperation In Astronautics

by Andrew G. HALEY

DURING the first three decades of the twentieth century the great rocket pioneers earnestly undertook theoretical formulations of rocket and astronautical projects. Hermann Oberth of Rumania and Germany, Konstantin Ziolkovsky of Russia, Hermann Noordung of Austria, Walter Hohmann of Germany, Robert Esnault-Pelterie of France, Robert H. Goddard of the United States, and many other eminent engineers, scientists, and industrial experimenters, published basic studies that led to the great mass of literature and to the extensive experimentation which burst forth in 1930, were interrupted only by World War II, and which underlie our present-day rocket knowledge.

Many of the pre-1930 pioneers exchanged letters and on a few occasions visited one another. Here was the beginning of international cooperation. Exceptions were Ziolkovsky and Goddard. The former remained in seclusion in Russia where he wrote "Space Investigations By Means Of Propulsive Space Ships" (1914) and "A Rocket Into Cosmic Space" (1924). Because he understood only Russian, and the Western pioneers understood no Russian, they were not acquainted with Ziolkovsky or his work. Goddard worked tirelessly on the actual rocket hardware, while theorizing, and by 1926 had made the world's first successful liquid propellent rocket, but he was extremely prudent about disseminating the information. It is interesting to read now the old publications of the present ARS* in which writers indicate that in the 1930's it was easier to obtain an interchange of information from the German rocketeers than from Dr. Goddard. One of the splendid international pronouncements of this era was the statement contained in a letter by Oberth to Goddard in 1922. With respect to space flight, he said ". . . I think that only by common work of the scholars of all nations can be solved this great problem."

In 1927 the first active forum for astronauts in all nations was established in Germany, the Society For Space Travel (VfR). The German society grew rapidly. Within one year after its historic foundation in Breslau by nine persons, the VfR had increased in membership to about five hundred persons and included the greatest rocket experts then living —notably, Oberth, von Perquet, Rynin, Esnault-Pelterie, Hohmann, von Hoefft, Valier and Opel. Members came from Germany, Austria, Russia and France. Similar societies sprang up in other countries. In those days, membership in such societies did not improve one's professional standing and much effort of the societies was devoted to proving to the public that astronautics was a science which could be pursued by sane men.

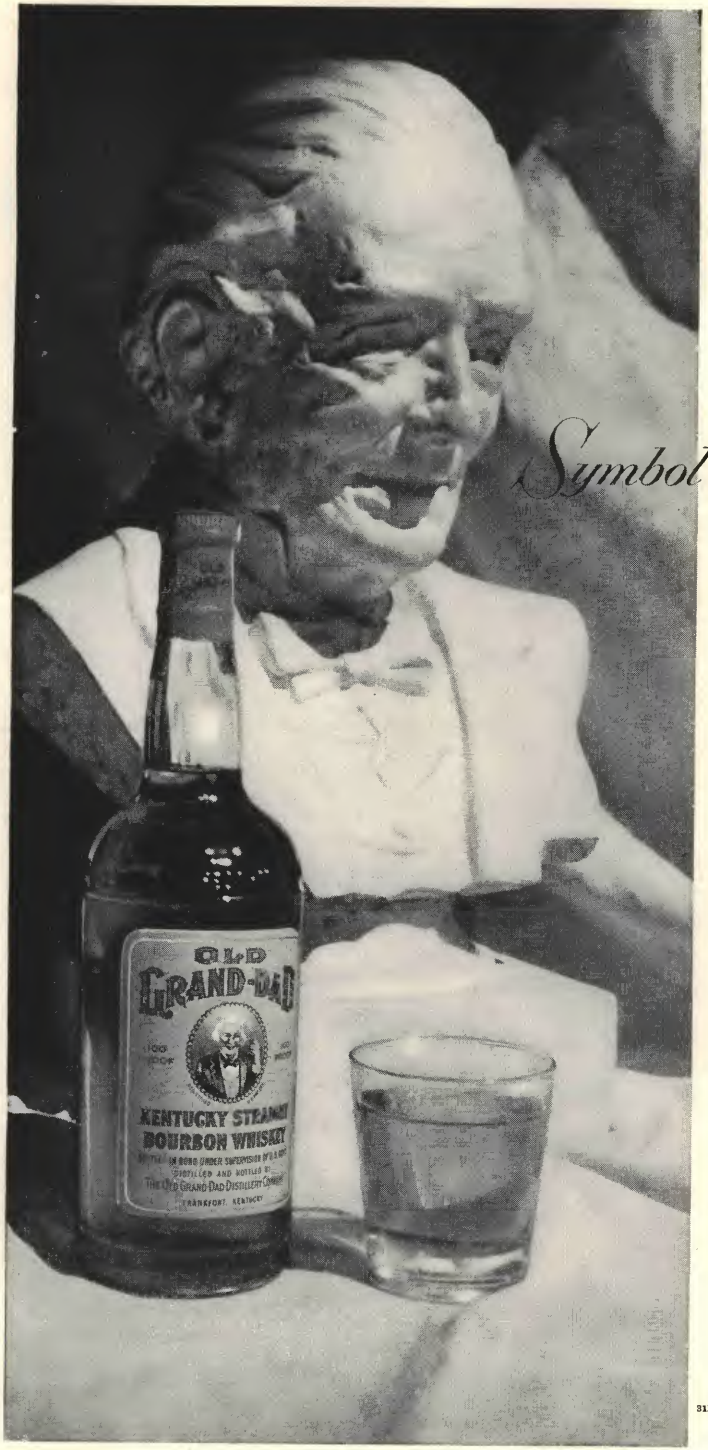
While the societies were engaged in this and more theoretical pursuits, the Austrian, Max Valier, startled his fellow members of the VfR, including Oberth, by a spectacular use of an improvised rocket automobile powered by powder charges. He also arranged a rocket mail delivery. Opel was killed in a rocket automobile demonstration. Under these circumstances it was difficult to establish the conservatism of the rocket worker. But courageous people carried on. In 1931 G. Edward Pendray of the ARS and his wife went to Berlin, tried unsuccessfully en route to locate Esnault-Pelterie, and spent some time discussing rocket engine problems with Oberth, Winkler, and others. Later ARS rocket motors showed the influence of "Raketenflugplatz," the testing ground of the VfR. This visit was none too soon. The German Army confiscated both plans and personnel, by degrees, from Raketenflugplatz and set up another larger installation near Kummersdoft. By 1932 the German society began to fade.

AT THIS point international cooperation gave an unexpected and strong impetus to the art of rocketry in Germany. This cooperation was the insistence by the Western Powers upon the provisions of the Versailles Treaty which, with catastrophic lack of foresight, had not included rockets on the list of weapons forbidden to the vanquished Germany.

Meanwhile, the ARS was growing. In 1930 the first bulletin of the Society appeared, containing an article on the "Universal Background of Interplanetary Flight." For many years this early ARS publication carried a column on "News From Abroad" suggesting strong interest in international astronautical affairs. France's great pioneer astronaut, Robert Esnault-Pelterie, presented to the Society an autographed copy of his historic "L'Astronautique" and on January 15, 1931, arrived in New York. Two thousand people turned out at an ARS meeting to hear him speak.

Mr. Haley is President of the International Astronautical Federation and General Counsel of the American Rocket Society.

*For some years the present American Rocket Society was known as the American Interplanetary Society. For the sake of simplicity, only the initials ARS will be used.



Symbol of confidence

Year after year the gentle, kindly figure of Old Grand-Dad has served to symbolize the trust and confidence in the hearts and minds of millions for this finest of all bourbons.

Old Grand-Dad

"HEAD OF THE BOURBON FAMILY"

KENTUCKY STRAIGHT BOURBON WHISKEY
100 PROOF • BOTTLED IN BOND
ALSO AVAILABLE IN 86 PROOF

NATIONAL DISTILLERS PRODUCTS CO.
99 PARK AVENUE, NEW YORK 16, N. Y.

31P

Astronautics *(from page 42)*

The world was now in the throes of the great depression and rocketry was proceeding very slowly. In 1932 the Russian-Polish astronaut, A. Sternfeld, went to France where he saw A. Ananoff, leader in French astronautical circles. Ananoff, himself an ex-Russian, has since then attempted to maintain some sort of liaison with Russian astronautical scientists and has been responsible, through his books, for providing the West with knowledge of Russian writings.

In 1933 Philip Cleator founded the British Interplanetary Society which immediately became an influential force in astronautics. A year later he traveled to Germany to find that the VfR "was no more." He wrote that the Raketenflugplatz "appeared derelict." The Army had taken over German rocketry.

The exigencies of warfare necessarily foreclosed cooperation between individuals in areas essential to national defense, and this situation has persisted since then. Within the framework of the establishment of friendly governments there has been very free exchange of information between individuals, and this undoubtedly has added immensely to the prospects of space flight. In addition to the wartime cooperation with the great scientists and engineers of our Allies, we now have the significant benefit of the knowledge and experience of many of the great German experts. These include such men as von Braun, Dornberger, Ehricke, Klein, Koelle, F. Haber, H. Haber, Schaefer, Stuhlinger, Strughold, and even Hermann Oberth himself—to mention only a few.

Many of the major nations of the world now have rocket and astronautical societies belonging to the IAF, including Argentina, Spain, Italy, Great Britain, Denmark, Egypt, Germany, Japan, The Netherlands, Norway, Austria, Sweden, South Africa, Brazil, Yugoslavia, and the United States. In addition to the IAF member societies in those nations, societies have been formed recently in Mexico, Chile, Peru, and Canada. The journals and other publications of the societies are interchanged, membership is open to all qualified persons without regard to national barriers, correspondence is freely interchanged, and personal visits are becoming more and more frequent.

AROUND 1900 a wealthy society matron in Paris, a Madame Guzman, announced an award of 100,000 francs, the "Prix Guzman" to go to the first person to establish interplanetary communication. The optimism of the time is indicated by the stipulation that Mars, being too near at hand, would not be included in the competition. The prize was never claimed.

The first practical gesture in the direction of this form of international cooperation was the establishment in 1929 by Robert Esnault-Pelterie and a banker, Andre Hirsch, of the "REP-Hirsch Prize." This award consisted of the payment of 5,000 francs to the author or experimenter who had done the most to further the idea of space travel in a given year, and was administered by the Société Astronomique de France. Hermann Oberth received a double award, 10.000 francs, in 1929 for his "Road to Space Travel." In 1930 and 1933 Pierre Montague received the prizes for papers on gaseous mixtures utilizable in the propulsion of rockets. In 1933, A. Sternfeld received an additional prize of 2,000 francs for a paper, "Invitation to Cosmonautics." Louis

Astronautics

Damblac received a "Prize of encouragement" of 2.000 francs for a paper on proving ground tests. Alfred Africano and the American Rocket Society were honored in 1936 with the prize for design of a high altitude rocket.

The Hermann Oberth Medal was established after the war and is administered under the aegis of the IAF. In 1954 it was awarded to Strughold for his work in the field of space medicine. In a further postwar gesture of international recognition, Ananoff presented A. V. Cleaver of the BIS with a medal from the Aero-Club de France for his organizational work on the Second International Astronautical Congress in London, 1951.

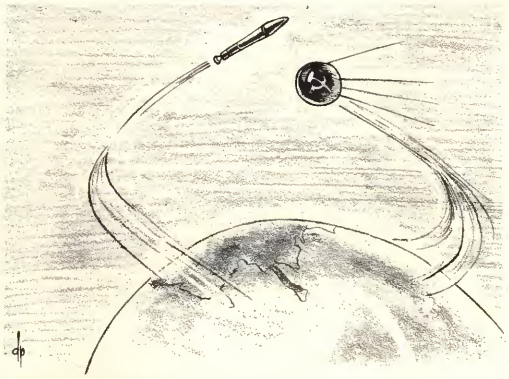
AT THE Fourth International Astronautical Congress (in 1953) in Zurich the Gunter Loesser Memorial Medal was established, to be awarded annually on the basis of competition. The first such award is to be presented to the author of the best paper on "The Economics Of Space Flight."

Germany's GfW has for some time kept an "Ehrenbuck der Astronautik" a roll of honor of astronautics, which now contains the names of Oberth, Ananoff, Esnault-Pelterie, von Pirquet, Pendray, and Cleaver, representing Germany, Austria, France, United States, and Great Britain, respectively.

In 1952, through the efforts of Ananoff, and with the backing of Groupement Astronautique Français and the Aero-Club de France, a special astronautical medal was awarded posthumously to Zielkovsky and was received by Russian officials of the Paris Embassy. This medal was sent to Russia and placed on exhibit in Ziolkovsky's native town of Kaluga.

The American Rocket Society Astronautics Award was approved in 1954 by the ARS Board of Directors. It was proposed and endowed by A. G. Haley. Haley's endowment is for 101 years. T. von Kármán was awarded the medal in 1954. The award will be made without regard to nationality or society affiliation.

International cooperation of a friendly competitive sort could be detected in the 1930's if one looked hard enough.



NEWS ITEM: In Paris this story has been making the rounds: Said the Explorer to the Sputnik when finally they were alone together, "And now that we're alone out here, let's speak our own language, 'Wie gehts'?"

Astronautics *(from page 45)*

At that time Gerhard Zucker, owner of a mail-rocket franchise from the German Post Office, went to Scotland for a friendly mail-shooting contest between the two countries. A series of mishaps unfortunately cancelled the contract before a winner could be determined. Mail rockets were enjoying a vogue at the time, one which did not subside completely until some ten years later.

An international mail-shoot took place in 1936 at the Rio Grande between the two towns of McAllen, Texas, and Reynosa, Mexico. Several shots were fired each way and all enjoyed themselves. While the Americans and Mexicans exchanged rockets and pleasantries, plans were being drawn up in Germany for a vast rocket test installation at Peenemunde. One year later, Peenemunde was in operation.

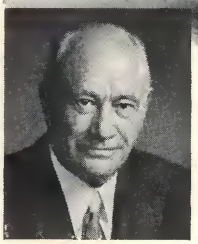
In 1938 Captain Frank Whittle of the RAF successfully flew a turbojet-powered aircraft. As the turbojet, like the rocket, was a reaction engine, it created immediate interest in engineering circles. For the first time in history there was a prospect of an extremely fast reaction-powered aircraft. The political situation was getting tense in Europe. A civil war was being fought in Spain, and Hitler was expanding his control throughout Europe.

America, too, was showing signs of rearmament. By 1937 the French, under the initiative of Robert Lancement, felt that the time had arrived when it would be appropriate to make an astronautical exhibit. The place and the occasion chosen were Paris, during the 1937 International Exhibition. At the Paris exhibition, material from America was shown, as well as from Austria, France, Germany, Great Britain, and Russia. The Cleveland Rocket Society sent a half-scale model of a research rocket.

In 1946 rockets again crossed the Rio Grande, but this time by accident: V-2 Number 14, fired from White Sands Proving Ground went astray. The radio command to destroy did not register in the rocket and it crashed south of Juarez, producing a large crater. Friendly Mexican officials promptly telephoned the Commanding Officer at White Sands to give a full report.

After years of private studies, and with the establishment of national rocket societies, it was only natural that the rocket technicians of the world should associate finally in an international organization. Most people realize that interplanetary flight will cost huge sums, and many, including Germany's G. Loeser, hold that "this huge task cannot be performed by a single country." With genuine desire to affiliate the world's rocket scientists in an effective organization, the German GfW circulated a resolution for close international cooperation among the world's astronautical societies, and in June 1949 the GfW and the BIS formally proposed that an international congress on astronautics be held. A. Ananoff of France made elaborate preparations for the congress and he had the close cooperation of H. Gartmann of Germany and A. V. Cleaver of the BIS.

The first International Astronautical Congress convened in Paris on September 30, 1950, with representatives of France, Germany, Austria, Great Britain, Denmark, Spain



"World Peace Through International Trade and Travel"

Conrad N. Hilton

This is the credo of Conrad Hilton. Realizing the important role played by hotels in helping to achieve this desired goal, Hilton Hotels is undertaking the largest world-wide expansion in history. The Hilton Hotels which have already contributed greatly to the economic improvement of their respective countries are: The Caribe Hilton in San Juan, The Castellana Hilton in Madrid, The Istanbul Hilton in Istanbul, The Continental Hilton in Mexico City, El Panamá Hilton in Panama, The Habana Hilton in Havana, and The Queen Elizabeth (a C.N.R. Hotel) in Montreal. The famous family of Hilton Hotels will also soon welcome The Berlin Hilton in West Berlin, The Nile Hilton in Cairo, and The Acapulco Hilton in Acapulco. In addition, Hilton Hotels are contracted for in Rome, Athens, Vienna, Trinidad, Baghdad, Tokyo and Bangkok. As each international Hilton Hotel is completed it will join the others abroad as well as the 25 Hilton Hotels in the U.S.A. in furthering the cause of "World Peace through International Trade and Travel."

HOTELS IN OPERATION (GRAY FLAG)

The Caribe Hilton, San Juan, Puerto Rico • The Castellana Hilton, Madrid, Spain • The Istanbul Hilton, Istanbul, Turkey The Continental Hilton, Mexico City, Mexico • El Panamá Hilton, Panama • The Habana Hilton, Havana, Cuba • The Queen Elizabeth (A C.N.R. Hotel) Montreal, Canada

HOTELS UNDER CONSTRUCTION (BLACK FLAG)

The Berlin Hilton, West Berlin, Germany, Opening in October • The Nile Hilton, Cairo, Egypt • The Acapulco Hilton, Acapulco, Mexico

HOTELS UNDER CONTRACT (WHITE FLAG)

Rome, Italy • Athens, Greece • Vienna, Austria • Trinidad, B. W. I. • Baghdad, Iraq • Not shown on globe — Tokyo, Japan and Bangkok, Thailand

Hilton Hotels International

Conrad N. Hilton, President

EXECUTIVE OFFICES • THE WALDORF-ASTORIA, NEW YORK 22, N. Y.

HILTON HOTELS RESERVATION OFFICES:

NEW YORK, LOngacre 3-6900 • CHICAGO, Financial 6-2772 • SAN FRANCISCO, YUkon 6-0576 • MIAMI, FRanklin 9-3427 • PITTSBURGH, COurt 1-5600 • TORONTO, EMpire 8-2921, or call Out-of-town Reservation Service at any Hilton Hotel in the United States or abroad.

Astronautics *(from page 46)*

and Argentina present. The United States did not participate. A. Ananoff was elected president of the Congress and H. Mineur was named honorary president. Madame Gabrielle Camille Flammarion and Madame de Vendeuvre were named vice-presidents. Britain's Cleaver held the chair for the important October 2 session, at which time the general nature of the federation was agreed upon. Eight resolutions were adopted, the substance of which was that an international organization should be formed for the study and development of interplanetary flight.

No technical sessions were held, but the delegates were received at the Palais de la Decouverte, where a visit to the Department Astronautique had been arranged. They were also guests at the atomic facility at Chatillon and at the Observatory of Meudon.

The first Congress was a significant step in the history of rocketry. Science had crossed national boundaries. Some of the most interested parties such as Oberth were prevented from attending because of visa trouble, but glowing reports of the Congress were brought back to them. The mission of the proposed new organization was clear: convert the rocket from an engine of war to a peaceful vehicle of interplanetary exploration.

The Second International Astronautical Congress was held in London at Caxton Hall, from September 3 to September 8, 1951. The original societies were represented, as was the United States (by ARS, the Reaction Research Society, the Pacific Rocket Society, and the Detroit Rocket Society.

At this Second Congress there was considerable technical exchange.* On September 8, 1951, a popular technical symposium was held wherein delegates discussed the over-all aspects of interplanetary flight. The primary second interest of this Second Congress was in the artificial satellite vehicle. The exchange of knowledge at London was the first organized attempt to promote world cooperation among rocket and astronautics workers. As such, it was a significant milestone in the history of science.

The constitution of the IAF which had been finally drafted during the previous year by the Loeser-Haley committee was adopted at the Third Congress in 1952. The principle of one vote per nation, regardless of the size of the country or the number of its rocket or astronautical societies, which was strongly advocated by the ARS delegation at London, was approved. It was decided that the ARS would be the voting member from the United States.

The Congress then turned to technical matters. Professor Oberth presented a paper on "Private Research in Astronautics," in which he outlined the many problems which should be investigated with the aid of astronautical societies rather than large-scale government-subsidized classified research and which thereafter would form the basis of world cooperation. Of this fundamental theme the Third Congress ended.

*The individual technical papers will not be discussed in this article. They have been summarized in previous issues of JET PROPULSION: London Congress, Nov. 1951, vol. 21, no. 6, p. 192; Stuttgart Congress, Nov.-Dec. 1952, vol. 22, no. 6, p. 350; Zurich Congress, Nov.-Dec. 1953, vol. 23, no. 6, p. 384; Innsbruck Congress, Jan. 1955, vol. 25, no. 1, p. 46.

Astronautics

The Fourth International Astronautical Congress convened in Zurich in the Technical University in August, 1953. Societies from ten nations were represented and three new members admitted: the Philadelphia Astronautical Society, the South African Interplanetary Society, and the Yugoslavian Astronautical Society. Japan and Israel sent observers. France was not represented. New societies in Spain and Egypt were reported in formative stages.

An important matter considered at the Fourth Congress was the establishment of an official publication. Recognizing the need for year-round means of international dissemination of information among its members, the Congress appointed a committee to set up a quarterly publication, ASTRONAUTICA ACTA.

The problem of obtaining recognition from world scientific organizations was given considerable attention and emphasis. Haley advised that IAF should immediately serve as a consultative nongovernmental organization to UNESCO.

It was evident throughout the Fourth Congress that the IAF was becoming a potent factor in international efforts for scientific cooperation. As a result of the efforts of the Federation, for example, the United States Air Force gave permission to the Swiss Professor Eugster to insert 400-gram packages of nuclear track plates in high-altitude constant-level balloons.

The Fifth International Astronautical Congress met at Innsbruck, Austria in 1954. The Austrian Society was host. The American Astronautical Society, the Spanish Astronautical Society, the Egyptian Astronautical Society, the Japanese Astronautical Society and the Brazilian Interplanetary Society were admitted to membership. France sent a large delegation, for the first time since 1952, but the French did not seek formal accreditation. Russia again failed to send observers. The Croatian Society for Natural Sciences, Astronautical Section, sent an observer.

With increased membership and other encouraging signs of further international cooperation, the delegates approved publication by Springer-Verlag, of *Astronautica Acta*, with editorial functions remaining with IAF. The news section was dropped from *Astronautica Acta* and instead a special bulletin containing news was set up for publication by the Secretariat in Zurich.

The developments concerning the earth satellite project, just prior to the convening of the Sixth Congress at Copenhagen in 1955, deserve some background discussion.

The first report of the Space Flight Committee of the ARS issued in 1952, called for an orbital unmanned satellite.

In 1953 the chairman of the Space Flight Committee invited Alan T. Waterman, director of the NSF, to attend a plenary meeting of the Committee, and thereafter ARS issued a confidential report stating that the Space Flight Committee proposes that the "National Science Foundation study the utility of an unmanned satellite vehicle to science, com-

Astronautics *(from page 49)*

merce and industry, and national defense. Such a study should precede any considerations of feasibility and cost which could be undertaken if the utility showed a definite need for a satellite vehicle."

On the morning of July 29, 1955 officials of UNESCO signified their agreement to cooperate with the IAF and its space flight program. In the afternoon a group of the leading French scientists and engineers agreed to join in the enterprise of peaceful astronautics—to organize a society for this purpose and to join the IAF. And in the evening, the White House announcement of its satellite project was released from Washington. Interestingly enough the Space Flight Committee of the ARS had anticipated the details and even much of the language of the American announcement. There were some changes—the "Mouse" became the "Bird" and so on. But the substance of the three reports of the Space Flight Committee in many respects paralleled the official announcement, and it was most gratifying that a great government proposed to go forward with a minimal satellite in connection with the program of the International Geophysical Year.

Of particular interest at the Sixth Congress meeting in Copenhagen in August, was the attendance of a two-man delegation from the Yugoslavia Society—Ajvaz and Sivcev. These engineers attended the meetings faithfully. During the course of the second day of the plenary session, Ogorodnikov and Sedov, Russian academicians, also appeared and attended the business and technical sessions of the Congress. The Russians necessarily attended as observers because no rocket society from Russia had applied for membership.

The Seventh Annual Congress of the International Astronautical Federation, held in Rome in 1956, was remarkable in many ways. More than 450 experts in the natural and social sciences attended the meetings and approximately fifty papers were presented. Three new national societies were elected to membership: Committee on Astronautics, Academy of Sciences (Russia); Polskie Towarzystwo Astronautyczne (Poland); and Société Française d'Astronautique (France), making a total of twenty-one voting members.

The 1957 Congress in Barcelona was keynoted by Sputnik. The great achievement of the USSR was acclaimed throughout the Congress. Andrew Haley was elected president of the IAF for the coming year. Vice-presidents elected were A. Hjertstrand, Sweden; J. M. J. Kooy, Holland; Leonid I. Sedov, USSR; L. R. Shepherd, Great Britain; Teofilo M. Tabanera, Argentina; and K. Zarankiewicz, Poland.

In view of the legal complications and involvements which are bound to arise as the result of ventures into space above the earth's atmosphere, a Committee was created to "define the regions of jurisdiction of air law and space law." By common consent, John Cobb Cooper, general counsel of the International Air Transport Association and world-renowned international lawyer, was named chairman of the committee, which has been designated the "Cooper Committee." The committee will submit its findings and recommendations to the Secretary-General of the United Nations. It was the consensus of the Congress that the Cooper Committee, in addition to defining air jurisdiction and space jurisdiction as an adjective task, should also undertake the substantive task of stating jurisdictional rules.

You don't need lots of hot water . . . the

NEW EASY AUTOMATIC

washes clothes clean (really clean!)

even in COLD water!

It's true!

The new EASY RIVIERA AUTOMATIC WASHER gives you *three* wash water settings—hot, warm or c*old*. And even with cold water washing, your clothes come out sparkling clean—a joy to behold. The reason? EASY's famous "Spiralator" washing keeps clothes moving in a spiral path so that *all* clothes are washed in *all* parts of the tub. It's *active* washing without harsh over-scrubbing.

See the new EASY Automatic Washer for yourself. See how safely—*and efficiently*—you'll wash woolens, synthetic fabrics, all manner of delicate things at EASY's Cold Water Setting. See the *extra* careful washing you get with EASY's two wash cycles, two spin speeds—for normal and Fine Fabrics.

Only EASY gives you this cleaner-than-clean washing—this complete fabric protection—and does it all automatically.

Semi-automatic—
spin dries as it washes!

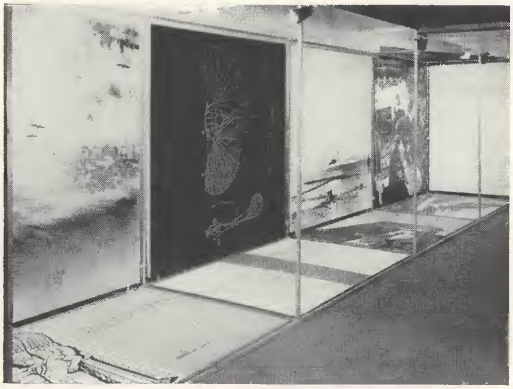
EASY SPINDRIER

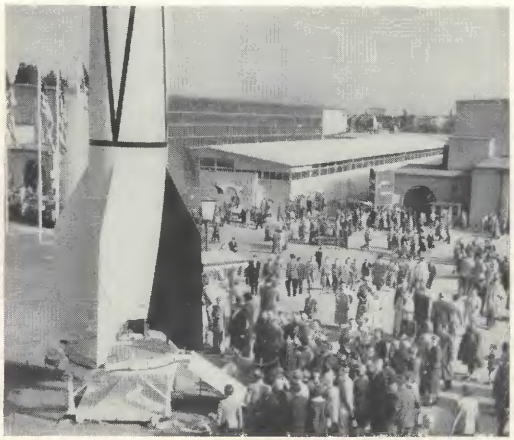
No other semi-automatic washer does so much . . . so fast . . . so well. While you wash a load of clothes in one tub, another full load is damp-dried in the other tub. A full week's laundry takes only an hour.

Only EASY gives you swing faucets that let you save hot, sudsy water for re-use, and a Fingertip Control Center for quick, convenient operation.

EASY LAUNDRY APPLIANCES

Division of the Murray Corporation of America, 919 N. Michigan Ave., Chicago, Illinois, U. S. A.





"Space Unlimited"

by Paul CHILD

THIS SPRING Paris is playing host to one of the first exhibitions on space research to have been put on by any government. "Space Unlimited" was designed by the Exhibit Section of USIA at Bonn, was shown first at the West Berlin industrial fair two years ago, and has been attended since then by almost a million people.

Upper atmosphere research was the theme of the exhibit and dominating the grounds outside the American pavilion was a full-size, 72-foot model of the rocket with which the U.S.A. proposed to launch its earth satellite in the International Geophysical Year.

In order that visitors, who were for the most part untutored, might have an initiation into the mysteries of the chosen theme, groups limited to two hundred and fifty persons were passed into the pavilion every eight minutes. Each group was shown an eight-minute movie which explored briefly and dramatically the main aspects of the exhibit: such things as the history of flight ending with the first break-through of the sound barrier, the most recent methods of forecasting the weather, uses of solar batteries and miniaturization, space-medicine experiments, and the development of balloons and rockets as research instruments.

Following the movie there was a section, in the form of large pictorial panels and moving models, concerned with Man's yearning through the ages to spring loose from the Earth. Beginning with Icarus and Daedalus, it touched on Montgolfier's balloon and the 1st flight of the Wright brothers, and ended with the supersonic jets of our own times.

The introductory section mentioned above led in turn to a series of panels, 3-dimensional objects and models outlining the history of rocket development, starting with records from China antedating the Christian era. It covered experiments in recent years using rocket propulsion for sleds and automobiles, for rocket-powered flight and the first attempts at mail-delivery by rocket. The pioneers in the development of atmospheric research were pictured next, and this part ended with a series of bays devoted to Goddard, the American who conceived and developed the idea of using liquid propellants which in turn made possible the contemporary satellite-bearing vehicles.

The main hall of the pavilion had an Earth-globe, ten feet in diameter, slowly turning as it hung suspended above the viewers. Around this globe an actual satellite orbitted. This was the first satellite ever shown outside a laboratory.

One long side of the hall faced a slanted platform where every eight minutes a new group of 250 persons stood. This wall was arranged much like a planetarium, to suggest a night sky with various constellations. The hall was lit entirely by ultra-violet light reflected from the globe, the satellite and the stars.

The star-wall had a movie screen in one upper corner, a 20-foot animated model of the Vanguard launching vehicle showing its internal components, and a television screen re-adapted as an oscilloscope. The satellite circling the globe

---

Paul Child was Exhibits Officer in Germany for two years, designed this "Space Unlimited" show, and is currently Deputy Director for Exhibits, USIA.

actually picked up emanations from a bit of radio-active cobalt, as well as from another energy source suspended in mid-air and sent them by radio to the television apparatus. This demonstrated, through violent distortions of the oscilloscope's sine-wave, how upper atmosphere impulses can be telemetered from a satellite to the earth. A taped lecture, synchronized with rocket-exposed movies and various animated devices on the star-wall, explained the mission and the methods of the satellite plan.

The taped lecture mentioned briefly such mysteries as miniaturization, solar batteries, printed circuits, atmospheric layers, cosmic rays and electronic computation. Each of these was further developed in the next part of the exhibition through a combination of actual objects, working mechanisms, and live-lectures by students of physics from the local University who were especially trained as guides.

Navy Captain Norman Barr piloted his C-54 "flying laboratory" to Berlin especially for the exhibition. A crew of American specialists in space medicine came with him and set up a temporary receiving station in the exhibit pavilion to receive physiological data telemetered from the plane flying over Berlin during each day of the display.

When the exhibit was shown in Munich last fall, Captain Barr again went to Germany. A 45-minute national network television program by Bayerischer Rundfunk was a feature of the exhibit and included film sequences shot at the Air Force Base and in-the-air footage of Captain Barr's plane to demonstrate medical aspects of space exploration. These film sequences were coupled with several USIS films and shown in conjunction with a live reportage from the exhibit itself at the park where it was on display, to an estimated audience of three million people.

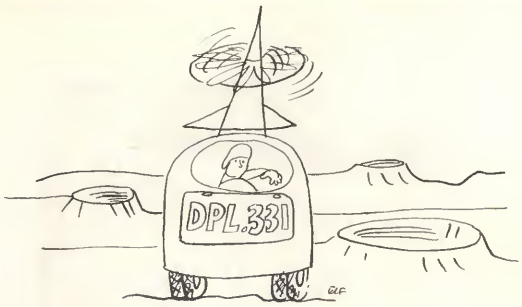
A meteorology section presented a number of large machines, recording devices, balloons, rockets, cameras and photographs, as well as an American engineer to answer questions.

Several specialists flew to Germany from the United States especially to set up the complicated parts of this exhibition. In the meteorology section there was an electronics engineer who mounted a working Rawin set for measuring temperature, humidity, pressure, etc., in the upper atmosphere. The flat plate television apparatus was flown from Palo Alto, with an engineer. The satellite had its own accompanying shepherd, and Captain Barr flew to Germany twice to put on his fascinating demonstrations and to lecture to specialized audiences of doctors and engineers.

The final part of the exhibit was composed of a great many research rockets, very large models of several supersonic planes, automatic moving diagrams and two eight-minute movies showing research rocket launchings and the first breaking of the sound barrier by the Bell X-1-A.

The sequence of elements described above were those used in its initial showing in Berlin, though that order was necessarily changed as the exhibit was moved to other cities in Germany, due to the variations in size of the rooms in the various halls, pavilions and museums where it was subsequently displayed.

Following Berlin it was shown in Frankfurt, Stuttgart, Hanover, Essen and Munich. It ended its German run in Nürnberg in December, 1957 and is opening in Paris this spring.



POST REPORT FROM MARS

April 1, 1959

PART I

General Description

a. Geography and Climate

Mars is a planet in the solar system, the fourth in order from the sun, or next beyond the Earth. It has a diameter of 4200 miles, and a mean distance of 141,000,000 miles from the sun. Its capital, Mars City, is centrally located on the Grand Canal, at a Martian latitude roughly equivalent to that of New York on Earth. Though the temperature is approximately the same as that of the U. S., the rarefied atmosphere makes the wearing of oxygen masks a necessity when not under the bubble confines of the city.

b. Description of Post

Mars was originally a single country under a king, but after the arrivals of the first Earthites a civil war broke out, with various groups siding with each of the two independently-arrived missions from Earth. The result of the war was the establishment of two governments—each having jurisdiction over approximately half of the planet: the Martian Federal Republic, which the United States recognizes, and the so-called Martian Democratic Peoples Republic, which is Universe-ally recognized as a distant but integral satellite in the Soviet orbit. The population of Mars City is 500,000, and of the country as a whole (or, more appropriately, as a half) an additional 100,000. Some authorities double these figures, owing to the fact that Martians have two heads, and they feel that each head should be counted in its own right. The foreign population is quite small, consisting of the members of the few diplomatic missions represented, and a small group of American businessmen. There is in addition a large number of American tourists annually.

c. Nearby Places of Interest

Mars is rather isolated and there are not too many places to which one can travel easily. There are no other large cities and access to the MDPR is forbidden. For one with a long leave a trip to Saturn or Jupiter is rewarding, and for a short excursion a trip to one of the satellites is recommended. In addition to the natural satellites, USTO (Upper Stratosphere Treaty Organization) maintains several artificial satellites. Embassy personnel are permitted at the US Forces-USTO rest area on MARCAS 4B (Mars Command Artificial Satellite 4B). Transportation to the satellite is by private rocket: these rockets are made available on a first-come, first-served basis by the Embassy rocket pool.

d. Location of Office

The Embassy is located in the center of town on the Grand Canal. The telephone number is MArs 42. If notified, someone from the Embassy will be at the rocketport to meet the new arrival.

PART II

Recreation and Social Life

a. Sports and Outdoor Life

Most Martian outdoor sports differ greatly from what Americans are used to, and it is unlikely that many Americans will have the time or patience to learn them. It is possible, however, to swim or sail on the innumerable canals of Mars and the enthusiast is advised to join the Mars Yacht Club. It is possible also to join amateur rocket and flying saucer clubs, though this sport can be rather expensive. Martian taste in indoor sport is similar to ours.

b. Social Recreation

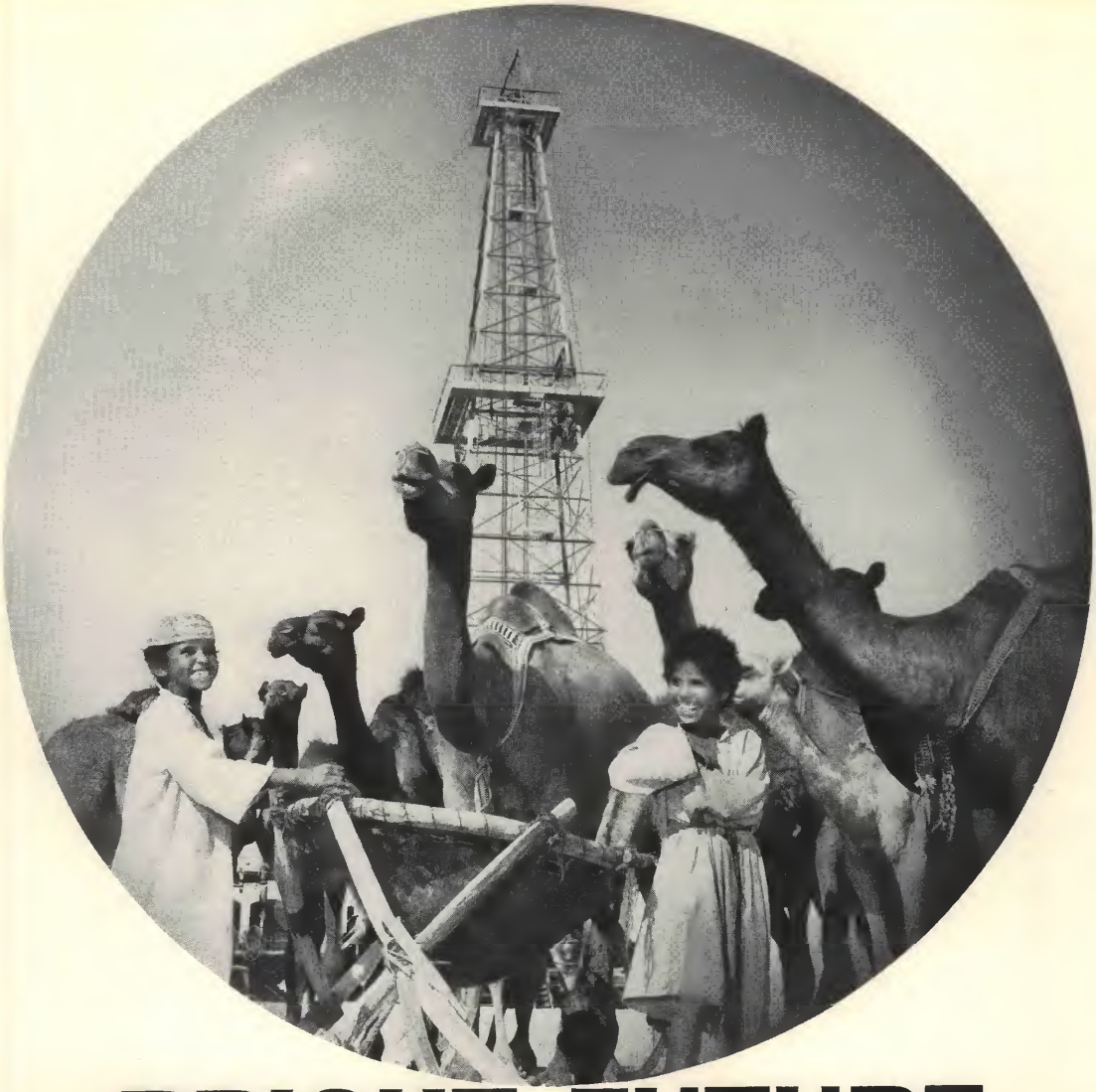
The cocktail party is a popular form of entertainment amongst the foreign colony. The Martians are very cordial and it should not prove difficult to form friendships with them. A few basic rules of conduct should be learned, however, such as: to which head does one address his remarks when conversing with a Martian?, etc. The Embassy gives briefings on Martian etiquette and social customs to all new arrivals.

c. Entertainment

There are several cinemas, theatres and burlesque shows, but all performances are in the Martian language and have little appeal for Americans. There are a number of good restaurants, which, if one is willing to adapt his palate to Martian cooking, serve excellent food. There are no night clubs as alcoholic beverages are prohibited. Martian authorities consider drinking useless and rather dangerous as Martians already see each other double. It is recommended that a good shortwave radio be brought. Because of the distance from Earth, reception is difficult, though the Armed Forces Network can be heard quite clearly at most times. Film for picture making is available but Martian techniques are not up to American standards, and color film must be sent to the States for developing.

There is a University in Mars, but all courses are in the Martian language. Language lessons can be arranged for on a private basis, but the language is very difficult to learn.

(Continued on page 56)



BRIGHT FUTURE

Each time Aramco drills an oil well beneath the Saudi Arabian desert, it's good news. For one thing, it means that youngsters like Ali and Ibrahim have a great deal to look forward to because development of their country's vast oil resources means more schools, more jobs and a secure, bright future.

ARAMCO ARABIAN AMERICAN OIL COMPANY
DHAHRAN, SAUDI ARABIA • NEW YORK, N.Y., U.S.A.

Mars Post Report (from page 54)

Most educated Martians speak English, and its teaching is compulsory in the high schools.

d. Libraries and Reading Matter

The U.S.I.S. maintains a library in Mars, and there are a few bookstores with books in English and other earthy languages. It is advisable to have subscriptions to American publications come through the open mail as the pouch is rather slow. The Space Editions of *Time* and *Newsweek* are available on Martian newsstands.

PART III

Housing

a. Government Quarters

The only government-owned buildings are the Embassy and the residence of the principal officer, known as Space-o House. This house, though somewhat old-fashioned, is quite comfortable by Martian standards.

b. Availability of Other Quarters

There is a shortage of housing in Mars and furnished apartments are practically impossible to find at rents within the housing allowance. Martian houses tend to be small by American standards due to the fact that the average Martian is less than four feet high. The houses are for the most part poorly constructed and not up to American standards.

c. Furniture and Furnishings

Due to the anatomical differences between Martians and Americans, Martian furniture is very unsatisfactory. It is recommended that, if at all possible, the employee bring with him furniture and other household equipment. Martian-manufactured electrical equipment, though inferior to American products, can, however, be utilized satisfactorily. In Mars the electric current is 5000 volts, SC, 200 cycles, and this must be borne in mind if electrical equipment is brought. Plumbing facilities are not up to American standards.

d. Temporary Quarters

There are several first-class hotels, including the Hotel Hilton-Mars, located a few blocks from the Embassy. Most new arrivals put up here.

PART IV

Food, Clothing, Community Service

a. Foods

Most foods are available here, and there are many unusual Martian products on the market, which many Americans may find very tasty after becoming adjusted to them. The Embassy maintains a Commissary, which is quite adequately stocked, but the items are apt to be somewhat more expensive than in the United States due to transportation costs.

b. Clothing

Clothing needed in Mars is roughly the same as one would need in New York, though it is advisable to bring enough garments to last the full tour, as Martian clothing is completely unsatisfactory because of the different Martian physique and the poor quality of workmanship.

c. Servants

Good servants are difficult to find. They need considerable training to learn American habits, and are not always trustworthy.

PART V

Transportation

a. Local Transportation

The public transportation system is adequate, though most equipment is outmoded. It is not advisable to bring an automobile because of the high cost of transport. Local Martian makes are quite small, but well adapted to the inferior roads. It is not necessary to acquire a Martian driver's license if one has a valid interplanetary driver's license.

b. Regional Transportation

There is a good network of canals in the Martian Federal Republic, and Martian Waterways operate an extremely efficient canal boat service. Travel between Mars and Earth, and other planets is by rocket (either Trans Space Stratospherewaysor Pan Univere Stratospherewaysways). The nonstop trip from Mars City to New York takes 64 years Earth Time—overnight on Standard Space Time and the fare can be paid in either American or Martian currency.

PART VI

Health Controls

a. Sanitation and Health Controls

Health and sanitary conditions in Mars are improving rapidly but are still far below American standards. The stagnant water in the numerous canals breeds mosquitoes. Shots to protect one from the usual diseases should be given before leaving Earth, and it is necessary to receive shots on arrival at the Embassy dispensary to ward off diseases peculiar to Mars. There are no good doctors in Mars, and the Embassy dispensary must be relied on for all medical treatment. In cases of emergency the patient is evacuated to Earth for treatment.

PART VII

Miscellaneous

a. Personnel Other than Foreign Service

There is an Army Attaché, a Navy Attaché, and a Space Attaché connected with the Embassy. Military personnel are not required to wear space suits except when on duty.

b. Other Conditions

Due to the unusual circumstances prevailing at this post, it is considered a 25% differential post and because of the difficult living conditions no one is required to stay over twenty years (Martian) at this post. Only the highest caliber Foreign Service people are expected to serve here, and it is felt by those of us who have been here over a period of time that, despite its disadvantages, Mars is a worthwhile and rewarding post. The morale is very high, there is a strong *esprit de corps*, and we all have fun together, from top to bottom.

Buck Dodger
Administrative Officer

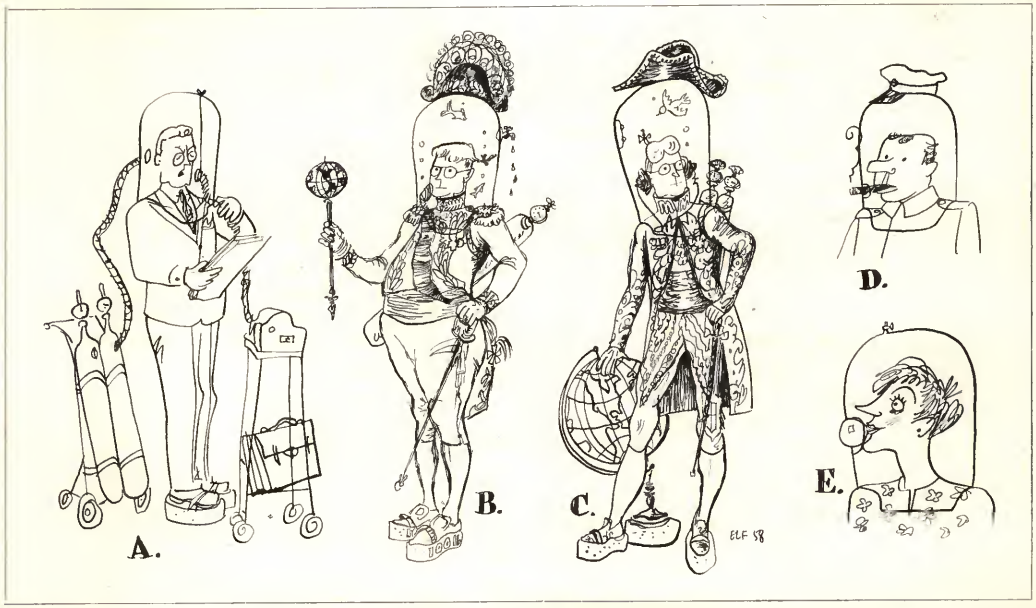
Outer Space Fashions

WITH THE appointment of Phil Farley as the Department's first Outer Space Officer, it is not too early for those who like to plan ahead to consider the question of suitable clothing and equipment for new posts on other planets. Many have thought that spatial costumes must necessarily be a streamlined cover-all type of clothing, capped by a helmet. The WASHINGTON POST said recently:

> "The space pilot looks much like an oversized bug in an ill-fitting skin in the new all-purpose space suit the Air Force has perfected for its pilots. His uniform is 100 per cent functional, and together with the pack of instruments on his back weighs 24 pounds. His face-covering helmet contains earphones, a microphone, and devices to supply oxygen, air pressure and heat.
>
> Space wardrobes for tourists presumably would follow the same utilitarian lines."

But we were glad to be rescued from such dreary dream pictures by artist Ed Fischer who sent us the sketches shown below, indicating that there may yet be a flowering of fashions celestial.

We have not been able to discover from PER just what the change-of-post clothes allowance will amount to for the fortunate few who are assigned to the new space posts, but we can expect decreased costs of clothing: a whole wardrobe, one can foresee, may be packed into a shaving kit and with action of chemicals and heat it will expand to properly fit the wide-shouldered slim-hipped diplomat of film fame. We regret that Mr. Fischer has not included drawings for our women officers and Foreign Service wives. But perhaps in another issue. . . .—G.T.B.



A. For Daily Chores-in-office (for men). **B.** Recommended for Presentation of Credentials. **C.** For Formal Dinners. For Ambassadors, Chiefs of Mission & Class One Foreign Service Officers. **D.** Faithful Chauffeur (from Earth). **E.** Reliable Secretary. Sketch shows bubble-gum hatch.