

ATLAS**THOR****TITAN****MINUTEMAN**

**Performance
is the test of
Space Technology Leadership**

The experience and creativity of Space Technology Laboratories in the field of space systems—both military and civilian—are documented in this record of accomplishment: Responsibility since 1954 for the over-all systems integration and test for the Atlas, Thor, Titan, and Minuteman elements of the U.S. Air Force ballistic missile program, and in such advanced space projects as Score, Tiros I, Transit IB, and Mercury. Conduct of vehicle re-entry projects and the Pioneer I, Explorer VI, and Pioneer V advanced space probes on behalf of the Air Force, ARPA and NASA. Contributions to these projects included design, construction, and instrumentation of space vehicles and ground systems; over-all systems engineering and technical direction; direction of launch and tracking; and data reduction and analysis.

This performance demonstrates STL creative flexibility to anticipate and initiate responses to the space challenge. To discharge its growing responsibility in Space Technology Leadership, STL is now broadening the scope of its activities. Resumes and inquiries concerning opportunities with STL are invited from outstanding scientists and engineers, and will receive meticulous attention.



**SPACE TECHNOLOGY
LABORATORIES, INC.**

a subsidiary of Thompson Ramo Wooldridge Inc.
P. O. Box 95005JJ
Los Angeles 45, California

Lost Alumni

The Institute has no record of the present addresses of these alumni. If you know the current address of any of these men, please contact the Alumni Office, Caltech.

- | | | | |
|--------------------------------|-----------------------------|---------------------------|----------------------------------|
| 1906
Norton, Frank E. | Rooke, Donald R. | Green, Jerome | Cebeci, Ahmed |
| 1911
Lewis, Stanley M. | 1935
Becker, Leon | Harvey, Donald L. | Cooke, Charles M. |
| 1915
Soyster, Charles J. | Bertram, Edward A. | Hubbard, Jack M. | De Medeiros, Carlos A. |
| 1918
Lavagnino, John F. | Huang, Fun-Chang | Kuo, J. Cheng | Fu, Ch'eng Yi |
| 1921
Arnold, Jesse | McNeal, Don | Noland, Robert L. | Harrison, Charles P. |
| Fletcher, Harold O. | 1936
Chu, Djen-Yuen | Robinson, Frederick C. | Hu, Ning |
| 1922
Cox, Edwin P. | Creal, Albert | Stanridge, Clyde T. | Johnson, William M. |
| 1923
Hickey, George I. | Dunn, Clarence L. | Taylor, D. Francis | Kern, Jack C., Jr. |
| Skinner, Richmond H. | Kelch, Maxwell | Tiemann, Cordes F. | Labanauskas, Paul J. |
| 1924
McKaig, Archibald | Kurihara, Hisayuki | Waigand, LeRoy G. | Leenerts, Lester O. |
| Mercereau, James T. | Nelson, Loyal E. | Whitfield, Hervey H. | Lin, Chia-Chiao |
| Tracy, Willard H. | Ohashi, George Y. | Yui, En-Ying | Marshall, John W. |
| 1925
Waller, Conrad J. | 1937
Burnight, Thomas R. | 1942
Bebe, Mehmet F. | Onstad, Merrill E. |
| 1926
Chang, Hung-Yuan | Cheng, Ju-Yung | Chastain, Alexander | Ozkaragoz, Ethem |
| McCarter, Kenneth C. | Easton, Anthony | Curtis, Thomas G. | Pi, Te-Hsien |
| Yang, Kai Jin | Fan, Hsu Tsi | Emre, Orhan M. | Pischel, Eugene F. |
| 1928
Chou, Pei-Yuan | Jones, Paul F. | Go, Chong-Hu | Rasof, Bernard |
| Hicks, Hervey C. | Lotzkar, Harry | Hughes, Vernon W. | Ridlehuber, Jim M. |
| Martin, Francis C. | Maginnis, Jack | Johnston, William C. | Shults, Mayo G. |
| Morgan, Stanley C. | Moore, Charles F. | Levin, Daniel | Stanford, Harry W. |
| Wingfield, Baker | Munier, Alfred E. | MacKenzie, Robert E. | Stein, Roberto L. |
| 1929
Briggs, Thomas H., Jr. | Nojima, Noble | Martinez, Victor H. | Sullivan, Richard B. |
| Burns, Martin C. | Penn, William L. | 1943
Angel, Edgar P. | Sunalp, Halit |
| Nelson, Julius | Rechif, Frank A. | Bethel, Horace L. | Trimble, William M. |
| Robinson, True W. | Servet, Abdurahim | Bridgland, Edgar P. | Unayral, Nustafa A. |
| Wolfe, Karl M. | Shaw, Thomas N. | Brown, James M. | Wadsworth, Jos. F., Jr. |
| 1930
Allison, Donald K. | 1938
Ackerman, John B. | Bryant, Eschol A. | Wight, D. Roger |
| Chao, Chung-Yao | Elliott, Bruce C. | Burlington, William J. | Williams, Robert S. |
| Douglass, Paul W., Sr. | Gershzohn, Morris | Carlson, Arthur V. | Wolf, Paul L. |
| Janssen, Philip | Goodman, Hyman D. | Colvin, James H. | Writt, John J. |
| Lea, William F. | Gross, Arthur G. | Daniels, Glenn E. | Yik, George |
| Shields, John C. | Kanemitsu, Sunao | Hamilton, William M. | 1945
Ari, Victor A. |
| White, Dudley | Li, Yuan-Chuen | Hillyard, Roy L. | Budney, George S. |
| 1931
Hall, Marvin W. | Lowe, Frank C. | Hilsenrod, Arthur | Bunze, Harry F. |
| Ho, Tsien-Loh | Ofsthun, Sidney A. | King, Edward G. | Fanz, Martin C. |
| Voak, Alfred S. | Okun, Daniel A. | Koch, Robert H. | Fox, Harrison W. |
| West, William T. | Porter, Edwin J. | Kong, Robert W. | Gibson, Charles E. |
| Woo, Sho-Chow | Tilker, Paul O. | LaForge, Gene R. | Jenkins, Robert P. |
| Yoshoka, Carl K. | Tsao, Chi-Cheng | Lee, Edwin S., Jr. | Knapp, Norman E. |
| 1932
Brass, P. D. | Wang, Tsun Kuei | Leeds, William L. | Kuo, Yung Huai |
| Patterson, J. W. | Watson, James W. | Ling, Shih-Sang | Levy, Charles N. |
| Schroder, L. D. | 1939
Asakawa, George | Lobban, William A. | Pooler, Louis G. |
| Wright, Lowell, J. | Brown, William Lowe | Lundquist, Roland E. | Romney, Carl F. |
| 1933
Applegate, Lindsay M. | Easton, R. Loyal | Mampell, Klaus | Tseu, Payson S. |
| Ayers, John K. | Gombotz, Joseph J. | McNeil, Raymond F. | Turkbas, Necat |
| Downie, Arthur J. | Liang, C. Chia-Chang | Mixsell, Joseph W. | Yank, Frank A. |
| Hsu, Chuen Chang | Neal, Wilson H. | Mowery, Irl H., Jr. | 1946
Allison, Charles W., Jr. |
| Kitusda, Kaneme | Oppenheimer, Frank | Nesley, William L. | Barber, John H. |
| Koch, A. Arthur | Robertson, Francis A. | Neuschwander, Leo Z. | Behroun, Khosrow |
| Larsen, William A. | Tatom, John F. | Newton, Everett C. | Bowen, Mark E. |
| Lockhart, E. Ray | Tsien, Hsue-shen | O'Brien, Robert E. | Burger, Glenn W. |
| Michal, Edwin B. | Wilson, Harry D. | Patterson, Charles M. | Chen, Ke-Yuan |
| Murdock, Keith A. | 1940
Batu, Buhtar | Pearson, John E. | Childers, Kenan C., Jr. |
| Rice, Winston H. | Gentner, William E. | Rambo, Lewis | Dethier, Bernard |
| Shappell, Maple D. | Gibson, Arville C. | Rivers, Nairn E. | Dyson, Jerome P. |
| Smith, Warren H. | Green, William J. | Roberts, Fred B. | Esner, David R. |
| 1934
Harshberger, John D. | Hosner, Clark L. | Rupert, James W., Jr. | Foster, R. Bruce |
| Liu, Yuan Pu | Hsu, Chang-Pen | Scholz, Dan R. | Halvorson, George C. |
| Radford, James C. | Karubian, Ruhollah Y. | Shannon, Leslie A. | Hayne, Benjamin S., III |
| Read, John | Kennedy, David H. | Smitherman, Thomas B. | Huestis, Gerald S. |
| | Lester, Raymond T. | Tindle, Albert W., Jr. | KeYuan, Chen |
| | Menis, Luigi | Vicente, Ernesto | Lewis, Frederick W. |
| | Paul, Ralph G. | Walsh, Joseph R. | Lowery, Robert H. |
| | Peterson, Norman L. | Washburn, Courtland L. | Maxwell, Frederick W. |
| | Tajima, Yuji A. | Weis, William T. | Olsen, Leslie R. |
| | Tao, Shih Chen | Wood, Stanley G. | Parker, James F. |
| | Torrey, Preston C. | 1944
Alpan, Rasit H. | Prasad, K. V. Krishna |
| | Ustel, Sabih A. | Arreguin-Lozano, Barbarin | Simmons, George F. |
| | 1941
Arnold, John K. | Baranowski, John J. | Sledge, Edward C. |
| | Clark, Morris R. | Barriga, Francisco D. | Smith, Harvey F. |
| | Dieter, Darrell W. | Bell, William E. | Tung, Yu-Sin |
| | Easley, Samuel J. | Benjamin, Donald G. | Weldon, Thomas F. |
| | Geitz, Robert C. | Berkant, Mehmet N. | Winson, Jonathan |
| | | Birlik, Ertugrul | 1947
Asher, Rolland S. |
| | | Burch, Joseph E. | Atencio, Adolfo I. |
| | | Burke, William G. | Clarke, Fredric B. |
| | | | Clements, Robert E. |
| | | | Clock, Raymond M. |

Where

do

you

go

from

here?



We're not looking for a direct answer.

This is just to remind you that a good knowledge of miniaturization is worth having — wherever you go in the world of engineering.

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Lost Alumni . . . continued

- Dagnall, Brian D.
 Darting, Donald A.
 Hammerle, William G.
 Hsu, Chi-Nan
 Hsueh, Chi-Hsun
 Huang, Ea-Qua
 Lane, James F.
 Leo, Fiorello R.
 MacAlister, Robert S.
 Manoukian, John
 McClellan, Thomas R.
 Miller, Curtis E.
 Molloy, Michael K.
 Monoukian, John
 Moorehead, Basil E. A.
 Olson, Raymond L.
 Orr, John L.
 Ramaswamy, Guruvayur S.
 Ray, Kamalesh
 Ruderman, Malvin A.
 Sanders, Lewis B.
 Sappington, Merrill H.
 Torgeson, Warren S.
 Vanden Heuvel, George R.
 Wan, Pao Kang
 Wellman, Alonzo H. Jr.
 Wimberly, Clifford M.
 Ying, Lai-Chao
- 1948**
 Agnew, Haddon W.
 Bunce, James A.
 Collins, Burgess F.
 Cotton, Mitchell L.
 Crawford, William D.
 Hager, James W.
 Hsieh, Chia Lin
 Hsiao, Chien
 Kelley, Roy S.
 Latson, Harvey H., Jr.
 Leavenworth, C. D.
 Mason, Herman A.
 Morehouse, Gilbert G.
 Oliver, Edward D.
 Rhynard, Wayne E.
 Swain, John Sabin
 Swank, Robert K.
 Voelker, William H.
 Winniford, Robert S.
 Woods, Marion C.
 Yanak, Joseph D.
- 1949**
 Barker, Edwin F., Jr.
 Bauman, John L., Jr.
 Baumann, Laurence I.
 Burkholder, Joseph F.
 Clancy, Albert H., Jr.
 Clendenning, H. C.
 Cooper, Harold D.
 Foster, Francis C.
 Galstan, Robert H.
 Heiman, Jarvin R.
 Ismail, Hassan M.
 Krasin, Fred E.
 Laberge, Jerome G.
 Lowery, Richard O.
 MacKinnon, Neil A.
 McElligott, Richard H.
 Merrell, Richard L.
 Orme, Eric C.
 Petty, Charles C.
 Rinehart, Marion C.
 Ringness, William M.
 Stappler, Robert F.
 Weiss, Mitchell
 Yu, Sien-Chiue
- 1950**
 Bryan, William C.
 Dowd, Thomas E., Jr.
 Edelstein, Leonard
 Li, Chung Hsien
 McDaniel, Edward F.
 McMillan, Robert
- Merrifield, Donald P.
 Nelson, Robert C.
 Pao, W. K.
 Paulson, Robert W.
 Petzold, Robert F.
 Roberts, Morton S.
 Scherer, Lee R., Jr.
 Schneider, William P.
 Vivian, James A.
 Whitehill, Norris D.
 Wright, Amos L.
- 1951**
 Arosemena, Ricardo M.
 Chong, Kwok-Ying
 Davison, Walter F.
 Denton, James Q.
 Hawk, Riddell L.
 Lafdjian, Jacob P.
 Li, Cheng-Wu
 Merkel, George
 Padgett, Joseph E., Jr.
 Pfeiffer, Walter F.
 St. Amand, Pierre
 Summers, Allan J.
- 1952**
 Abbott, John R.
 Arcoulis, Elias G.
 Cook, Samuel P.
 Gerington, Thomas E.
 Harrison, Marvin E.
 Helmuth, James G.
 Loftus, Joseph F.
 Long, Ralph F.
 Lunday, Adrian C.
 Munson, Albert G., Jr.
 O'Brien, Joseph
 Primbs, Charles L.
 Robieux, Jean
 Schaufele, Roger D.
 Shelly, Thomas L.
 Sutton, Donald E.
 Wiberg, Edgar
 Wilson, Howard E.
 Woods, Joseph F.
 Zacha, Richard B.
- 1953**
 Clark, David J.
 Lennox, Stuart G.
 Mishaan, Alberto
 Vidal, Jean L.
- 1954**
 Feuchtwang, Thos. E.
 Mertz, Charles, III
 Quiel, Norwald R.
- 1955**
 Crowe, Thomas H.
 Lim, Macrobio
 Moore, William T.
- 1956**
 Hershberger, Edw. E.
 Hsu, Nan-Teh
 Marcy, William L.
 Spence, William N.
 Tang, Chnng-Liang
- 1957**
 Howie, Archibald
 Leader, Elliot
 Lee, Wonyong
 Soux, Luis B.
 Stuteville, Joseph E.
 West, Clinton
 Wong, Chi-hsiang
- 1958**
 Pjerrou, Gerald M.
 Rieunier, Jacques M.
 Schumam, Thomas G.
- 1959**
 Graham, Wm. R., Jr.
 Greenberg, Joel D.
- 1960**
 Funada, Albert T.



Donald W. Douglas, Jr., President of Douglas, discusses valve and fuel flow requirements for space vehicles with Dr. Henry Ponsford, Chief, Structures Section.

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Douglas is now seeking qualified engineers, physicists, chemists and mathematicians for programs like SATURN plus others such as ZEUS, SKYBOLT, MISSILEER, DELTA, GENIE and ANIP. For full information write to Mr. C. C. LaVene, Douglas Aircraft Company, Inc., Santa Monica, California, Section B



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