

# 'Lifting Bodies' Concept To Undergo Flight Tests

By REYNOLDS KNIGHT

A whole new concept in space vehicles called "lifting bodies" will get a crucial test here sometime in the next few weeks.

The concept is a wingless glider with twin stabilizers and a nose and cockpit resembling the face of a one-eyed insect.

Lifting-body aircraft are now attracting sizable research efforts by NASA, the Air Force, and many of our large aircraft companies. In the upcoming test flights, some NASA officials confi-

dently expect to find the technological base for tomorrow's space re-entry vehicles.

Looking like a contour bathtub, the lifting body uses its shape to make more air work against its bottom than its top, thus providing stability and buoyancy in the air. It is possible to slip lifting-body craft from side to side, a distinct improvement over present ballistic re-entry craft, which are on a fixed trajectory after retro-rocket firing. Another advantage is that the lifting-body glider slows sufficiently before landing to allow the use of a tricycle landing gear.

In the hope that ways will be found to fit these gliders with some sort of rocket power, planners are even envisioning them as space ferries capable of carrying men and supplies to and from orbiting space stations, or as transports capable of hurling passengers to any point in the world in a matter of minutes.

IN THE INTEREST of the nation's space and defense industries, the U. S. government has just dedicated a factory addition whose daily output could fit into half a teaspoon.

The new facility is part of a \$1,150,000 modernization program to improve the technology and productive capability of the Turtle Mountain Ordnance plant at Rolla, N. D. Here are made the synthetic sapphire, ruby, and tungsten carbide jewel bearings without which the highly precise instruments of space, defense and the aero industries could not function.

The plant, only one of its kind in the U. S., is operated for the General Services Administration by the Bulova Watch Company under a dollar-a-year contract. More than 17 million bearings have

been made there since its establishment in 1952.

An idea of the size of the jewels can be gained from the fact that a teaspoon can hold 25,000 of them. Each is drilled, shaped and polished to tolerances of one hundred-thousandth of an inch. There are 350 of these tiny bearings in a bombsight and up to 4,000 in an aircraft. Gen. Omar N. Bradley, Bulova chairman, said that to date some 39,000 jewels have been consumed in the Gemini and Apollo space programs.

ASTRONOMERS are on a heavenly buying spree, and their clamor for a closer look at the solar system is ringing up big sales for the nation's glass makers. Already the annual market for huge telescopic lenses is estimated at between \$6 million and \$10 million, and the figure is likely to grow enormously since orders for telescopes larger than 200 inches in diameter now are coming in, industry sources say. Retirement plans for self-employed people may be substantially liberalized under a bill voted by the House Ways & Means Committee. New rules would allow doctors, lawyers and other professional people to double the tax deductions they currently claim for setting aside retirement funds. Outlays by cities in the U. S. for parking facilities rose 28 per cent from \$80 million in 1963 to \$102 million in 1964, the latest year for which statistics have been made available.

FIBERBOARD residential siding produced by a New York firm is "toasted" by heat from the world's largest single industrial dielectric unit. The "Thermex" apparatus, 12 times as powerful as a "clear channel" AM radio transmitter, was recently built by the Votator division of Chemetron Corporation.

Louisville, to heat-cure fiberboard siding.

Four mats of wood fiber impregnated with resins adhesives are placed between the 600,000-watt unit's massive electrodes and heated uniformly and throughout their mass. At the same time the fiber is compressed in a 3,500-ton hydraulic press. The combination of dielectric heat and pressure converts the mats into rigid 5-by-18 sheets of fiberboard.

THE LATEST in auto seat belt hook-ups is the lap-shoulder belt, which uses just one buckle to adjust both portions of the belt. A new fully electric typewriter priced under \$200, features office typewriter styling, electric carriage return, and backspace. It has full keyboard power, and is equipped with a fully-electric tabulator, ribbon feed, and shift. A telephone can be used to query a computer over ex-

isting telephone lines and obtain an immediate voice response. For instance, to check a person's credit takes about 30 seconds. In that

time the computer would give the caller an answer such as "Credit OK," or "limit credit to \$50," or "credit card reported lost."

## Security First National To Open Del Amo Branch

The official opening of Security First National Bank's Del Amo branch, now nearing completion in the Del Amo Shopping Center, will take place Friday, June 24, bank officials announced.

In conjunction with the bank's first day of business, plans call for a day-long open house celebration from 10 a. m. to 8 p. m.

The new branch, located at 21700 Hawthorne Blvd., is one of three branch sites opened by Security Bank this month. It becomes the bank's 336th location in Southern

California and the fourth Security Bank branch to serve the residents and business community of Torrance.

The Del Amo branch will offer a complete line of banking services and provide safe deposit and escrow accommodations. For customer convenience, the bank has opened a rear entrance, adjacent to the customer parking area.

The contemporary styled building was designed by the architectural firm of Chaix & Johnson Associates. General contractor is E. & T. Constructors, Torrance.

## Hahn Speaks To Clergy

A spiritual challenge to all ministers in Los Angeles County was issued this week by Supervisor Kenneth Hahn to help solve the serious problems of tension and unrest in Los Angeles.

"The challenge of inspiring a change for good in our community is greatest to you in this room," Hahn told more than 500 clergymen of all faiths in the first "Convocation of the Clergy" in County history at the Hall of Administration.

Hahn told the clergymen, who came from all parts of the county: "Basically, I feel the real and complete

answer to racial tension must come from the spirit. Permanent and lasting influences that change people's lives can only be a spiritual force."

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THE BIBLE  
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TO YOU

Sunday, June 12th  
KFI-640 kc-7:45 A.M.  
KMPC-710 kc-8:45 A.M.  
KDAY-1580 kc-4:30 P.M.  
KGIL-1260 kc-11:00 P.M.  
KALI-1430 kc-4:30 P.M.  
This Week's Christian Science  
Program #219  
"WHAT DO WE EXPECT  
FROM PRAYER"

## Enroll Now Fall Semester

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**Support Your Church**

**CHURCH CALENDAR**

**Torrance  
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**NATIVITY CATHOLIC CHURCH**  
1447 Ingracia Ave., Torrance  
Phone: FA 5-2776  
Rev. John P. Cremins, Pastor  
MASS SCHEDULE  
Sundays: 6, 7, 8, 9, 10-11:15, 11:15, 12:15 and 5 p.m.  
St. Joseph's at 9:30 A.M.  
SATURDAY CONFESSIONS  
10:30 to 11:30 A.M.; 3:30 to 4:30 P.M.  
St. Joseph's at 7:15 P.M.  
BAPTISMS  
Every Sunday at 1:45 P.M.

**SOUTH BAY BAPTIST CHURCH**  
4665 Sharynne Lane, Torrance, Calif.  
Pastor, Dr. J. C. Brumfield  
Frontier 5-3433  
Sunday School.....9:45 A.M.  
Church Services at 11:00 a.m.  
—Junior and Primary Church 11:00 A.M.  
Baptist Training Union 6:00 P.M.  
Evening Worship.....7:00 P.M.  
Wednesday Prayer Service.....7:30 P.M.  
Nursery and cradle care — All services. Bus transportation service.

**FCURSQUARE GOSPEL CHURCH**  
Corner Allington and Sepulveda  
Tel. DA 6-3072  
Rev. and Mrs. J. P. Lowen  
SUNDAY: Sunday school 9:30  
Group Services 10:30 a.m.  
(Y.P. Chalice, Defenders)  
Evangelistic 7:30 P.M.  
a.m. Morning Worship 10:45 a.m.  
MIDWEEK Wednesday — Bible Study at 7:30 p.m.  
PUBLIC INVITED

**WALTERIA ASSEMBLY OF GOD**  
24404 Hawthorne Blvd., Walters  
Rev. Edw. L. Hughes, Pastor  
Frontier 5-7788  
Sunday School—9:45 a.m.  
Morning Worship—11:00 a.m.  
Children's Church—11:10 a.m.  
Evangelistic Services—7:00 p.m.  
Wed. Prayer Meeting—7:00 p.m.  
Wed. Young Peoples—7:00 p.m.

**ST. ANDREW'S EPISCOPAL CHURCH**  
1432 Ingracia—FA 5-7781  
Rev. Hugh R. Percey, Rector  
B.A. B.D. Rector  
7:30 a.m. Holy Communion  
9:15 a.m. Family Worship Service followed by Church School and Coffee Hour  
11:00 a.m. Morning Worship (Choral Eucharist on 1st and 3rd Sundays)  
(Child care and Nursery provided at 9:15 and 11 a.m. services)  
Weekdays: Holy Communion at 11 a.m. Thursdays and 6:30 a.m. on All Saint's Days.

**ST. LAWRENCE CATHOLIC CHURCH**  
1900 Prospect Ave., Redondo Bch.  
Monsignor Daniel P. Collins  
Mass 7, 8, 9, 10, 11:15, 12:15  
Mass 7, 8, 9, 10, 11:15, 12:15  
FR 5-8087

**FIRST CHURCH OF THE NAZARENE**  
1501 West Carson  
R. Wallis Kornegay, Pastor  
Ph. FA 5-4080  
9:45 Sunday School  
10:30 Morning Worship  
7:00 p.m. Evening Service

**DEL AMO SOUTHERN BAPTIST CHURCH**  
3915 W. 226th at Ocean  
Torrance  
Sunday School—9:45 A.M.  
Training Union—9 P.M.  
Worship Services—11 A.M.—7 P.M.  
Wednesday-Midweek Services, G. A. & R. A. Auxiliaries—Teachers 7 P.M.  
Prayer Service—7:45 P.M.  
Choir Rehearsal—8:30 P.M.  
Pastor—Daniel B. Weaver Jr., FR 5-7440—FR 1-3925  
MORNING WORSHIP SERVICE

**FIRST LUTHERAN CHURCH**  
1725 Flower Street  
Phone 329-4181  
William J. Roeder, Pastor  
Phone FA 5-3249  
Phillip C. Hillier, Assoc. Pastor  
Phone 679-7710  
Worship Services  
8:00 a.m.—9:15 a.m.—10:45 a.m.  
Sunday School  
9:00 a.m.—9:15 a.m.—10:45 a.m.  
Nursery services from 9:15 a.m. and 10:45 a.m.  
Holy Communion—First Sunday  
Luther League—2nd and 4th Sundays  
Christian Elementary School—Kindergarten through 8th Grade

**FIRST METHODIST CHURCH**  
Torrance  
Carson and El Prado  
Phone FA 5-3242  
Rev. Arthur Nagel, pastor  
Res. Phone FA 5-6231  
Rev. Richard Hansen, associate  
SUNDAYS: Two Worship Services  
9:30 and 11 A.M.  
Two Communion Churches  
9:30 and 11 A.M.  
All ages—nursery through adults.  
Fellowship Meeting 6:30 P.M.

**FIRST BAPTIST CHURCH**  
at Carson & Manuel St.  
Torrance, Calif.  
Phone FA 5-6030  
Rev. Robert Coburn, Pastor  
SUNDAY—2 Morning Services  
9:15 A.M.—10:45 A.M.  
Sunday School 9:15 for Nursery thru Juniors College and Adults  
10:45—Jr. High and High School  
Fellowship Training—6:15 P.M.  
Evangelistic Message—7:00 p.m.  
WEDNESDAY—Bible Study 7:30 P.M.  
Communion Service and Prayer  
Nursery provided for all services,  
also sound proof mothers' room.  
ALL WELCOME

**FIRST CHRISTIAN CHURCH OF TORRANCE**  
(Disciples of Christ)  
2935 El Dorado, FA 5-2820  
Rev. H. Milton Sippel, Minister  
Res. Phone FA 5-4485  
Rev. Robert Neil Jones  
Minister of Education  
Res. Phone 679-6886  
Two Sessions of Church School and Morning Worship,  
9:30 and 11:00 a.m.  
Nursery provided at both sessions  
CHI RHO Fellowship  
3:30 p.m.  
Christian Youth Fellowship—7 p.m.

**FIRST CHURCH OF CHRIST, SCIENTIST**  
218th St. and Manuel Ave.  
Torrance, Calif.  
Church Services—11 a.m.  
Wednesday Eve Meetings—8 p.m.  
Sunday School—  
9:15 a.m. and 11:00 a.m. Children under 10 years of age must be accompanied by parent or guardian for enrollment.  
Reading Room — 1406 Craven  
Open 10 a.m. to 5 p.m. daily except Sunday and Holidays. Also 7 to 9 Monday and Friday evenings.  
All are welcome to attend our services and to use our Reading Room.

**CENTRAL CHURCH EVANGELICAL UNITED BRETHREN**  
Marcellina & Arlington  
Rev. Walter M. Stanton  
FA 5-3010  
9:30—Sunday School  
11:00—Morning Worship  
6:30—Youth Fellowship  
7:30—Evening Worship  
Midweek Worship Service 7:00  
Wednesday Evening

**IMMANUEL LUTHERAN CHURCH (Missouri Synod)**  
706 Knob Hill Ave., Redondo Beach  
Near Southwood Park  
Sunday School.....9:45 A.M.  
Worship Service.....8:30 A.M. and 11 A.M.  
Pastor E. M. Schoppa  
FR 5-9353

**ST. CATHERINE LABOURE CHURCH**  
3546 Redondo Beach Blvd.  
Torrance  
Phone DA 3-3900  
Sunday Masses: 7, 8, 9, 10, 11, 12  
Weekday Masses: 6:30 a.m. and 7:15 a.m.  
Confessions: Saturday 4:00 to 5:30  
7:30 to 9:00

**ST. MARK'S PRESBYTERIAN CHURCH**  
24027 Pennsylvania Ave., Lomita  
DA 6-4086  
Sunday Church School 9 a.m.  
(All ages including adults)  
Church Worship 10:30 a.m.  
(Nursery care provided)  
Youth Fellowship 6 p.m.  
The Rev. Eldon Durban, Minister  
THIS CHURCH WELCOMES PEOPLE OF ALL RACES

**FIRST PRESBYTERIAN CHURCH OF GARDENA**  
1937 W. Redondo Beach Blvd.  
Phone DA 4-1064  
Dr. R. Murray Jones, Minister  
1492 W. 163rd St., Gardena  
DA 5-1718  
Sunday Worship Service—11 a.m.  
(nursery care provided)  
Sunday Church School  
9:30 & 11:00 a.m.  
Senior Hi Fellowship and Junior High Fellowship  
Sundays at 7:00 p.m.

**NARBONNE AVENUE SOUTHERN BAPTIST CHURCH**  
24730 Narbonne Ave., Lomita  
Phone DA 6-6029  
Church.....8:30 A.M.  
.....10:50 A.M.  
Sunday School.....9:45 A.M.  
Training Union.....6 P.M.  
Worship Service.....7 P.M.

## How'd you like to write checks on some of that?

Well, that's what United California Bank's new BALANCE/PLUS is all about! It's your balance plus our balance and here's how it works.

After your credit's been approved, you just start writing checks. When your checking balance runs low, UCB builds it up again. Or if you prefer, you can use BALANCE/PLUS to write yourself a loan whenever you need it. Either way, the money's as easy to get as signing your name. And as easy to pay back as we could possibly make it. Best of all, once you have UCB standing behind you...you'll never have any more credit red tape in front of you. And here's a plus! You get a special UCB customer courtesy card which guarantees you can cash a check up to \$300 at any UCB office. BALANCE/PLUS really makes you feel like a million! We've often told you that United California Bank is the bank that does a little more for you. Well, BALANCE/PLUS is a little more that's always there when you need it. Why not stop by UCB...or call...and check on it!

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