

The AIRCRAFT YEAR BOOK

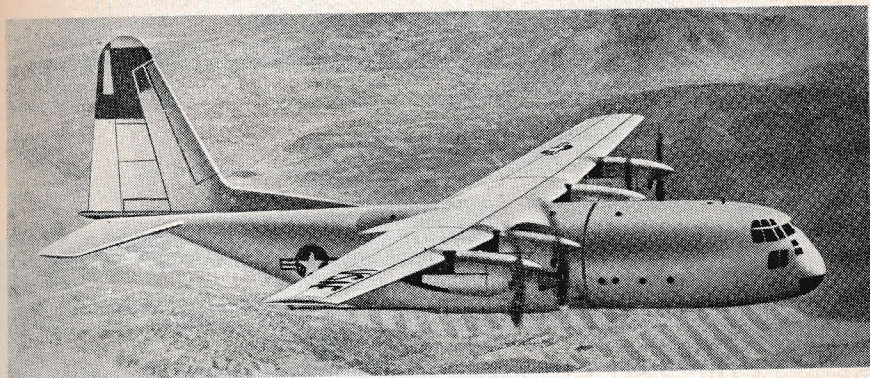
PLANES IN USE

Domestic Airlines

(Source: Air Transport Association)

Aircraft	1945		1946		1947		1948		1949		
	No. of Engines	No. Planes	Miles		Miles		Miles		Miles		
			Per Day	No. Planes	Per Day	No. Planes	Per Day	No. Planes	Per Day		
Beechcraft	2	0.8	66	0.4	502	5.3	721	6.4	648	....	....
Boeing											
247-D	2	....	....	1.0	607	4.0	654	0.6	818	....	....
SA-307B	4	3.6	2,094	5.0	1,695	5.0	1,344	5.0	1,362	5.0	1,365
377	4	....	....	....	....	....	....	....	....	10.0	410
Convair 240	2	....	....	....	....	....	....	16.2	899	93.0	853
Douglas											
DC-2	2	....	....	....	....	....	....	....	....	....	....
DC-3	2	314.3	1,756	426.6	1,638	446.7	1,303	442.4	1,190	398.0	1,077
DST	2	....	....	....	....	....	....	....	....	....	....
DC-4	4	....	....	85.8	1,758	149.6	1,546	150.8	1,318	160.0	958
DC-6	4	....	....	....	....	21.1	1,462	54.4	1,364	104.0	1,655
Lockheed											
Electra	2	1.3	727	3.0	587	....	....	3.9	591	....	....
Lodestar	2	17.7	1,545	16.7	1,285	11.5	1,086	12.0	335	11.0	975
Constellation	4	....	....	6.6	1,190	21.3	1,742	32.0	2,067	55.0	1,596
Sikorsky S-38	2	2.0	184	0.1	100	....	....	....	....	....	....
Stinson											
Single Motor	1	10.9	404	11.0	445	7.8	420	7.0	447	....	....
Tri-Motor	3	4.0	61	....	....	....	....	....	....	....	....
Waco	1	....	....	....	....	....	....	....	....	....	....
Martin 202	2	....	....	....	....	2.0	782	17.6	859	24.0	1,255
404	2	....	....	....	....	....	....	....	....	....	....
Curtiss C-46	2	....	....	....	....	....	....	0.2	802	2.0	224
			1950	1951	1952	1953	1954				
Beechcraft	2	....	....	....	....	....	....	....	....	....	....
Boeing											
247-D	2	....	....	....	....	....	....	....	....	....	....
SA-307B	4	5.0	656	....	....	....	....	....	....	....	....
377	4	10.0	1,283	16.0	1,630	16	2,202	16	2,370	11	2,057
Convair 240	2	103.0	940	102.0	1,102	99	1,254	90	1,373	92	1,218
340						24	624	98	1,225	116	1,358
Douglas											
DC-2	2	....	....	....	....	....	....	....	....	....	....
DC-3	2	388.0	972	425.0	1,014	363	938	316	948	283	839
DST	2	....	....	....	....	....	....	....	....	....	....
DC-4	4	150.0	1,324	137.0	1,614	124	1,666	126	1,751	109	1,484
DC-6	4	111.0	1,751	139.0	2,207	161	2,321	175	2,394	185	2,235
DC-7						....	....	10	2,348	61	2,286
Lockheed											
Electra	2	....	....	....	....	....	....	....	....	....	....
Lodestar	2	11.0	969	11.0	1,152	11	1,184	11	1,212	11	748
Constellation	4	83.0	1,264	101.0	1,976	125	2,103	135	2,239	141	2,370
Sikorsky S-38	2	....	....	....	....	....	....	....	....	....	....
Stinson											
Single Motor	1	....	....	....	....	....	....	....	....	....	....
Tri-Motor	3	....	....	....	....	....	....	....	....	....	....
Waco	1	....	....	....	....	....	....	....	....	....	....
Martin											
202	2	33.0	954	12.0	786	21	1,017	25	966	25	1,003
404	2	....	....	18.0	1,089	96	1,206	100	1,373	100	1,393
Curtiss C-46	2	....	....	....	....	....	....	....	....	....	....

# BIG NEW LIFT FOR AIR TRANSPORT



## Production rolling on New Allison Turbo-Prop-powered Lockheed C-130 Hercules

AMERICA'S first production Turbo-Prop transport—the Lockheed C-130 Hercules—is coming off the lines of Government Aircraft Plant No. 6 in Marietta, Georgia, in growing numbers. Powered by four Allison T56 Turbo-Prop engines with a total of 15,000 horsepower, this new cargo plane can carry some 20-ton payload long distances at *amazingly low operating cost.*

With its exceptional power-to-weight ratio, the Hercules can take to the air at a 30 degree angle after a ground run of less than a thousand feet, considerably less than other planes of comparable size. Its low fuselage floor, 41 inches off the ground, provides truck-bed loading,

while the adjustable tail ramp also permits vehicles to drive directly aboard.

Developed for the Tactical Air Command, the Hercules is a highly mobile, high-speed transport, able to rush men and materials to advanced areas and evacuate wounded.

The Allison Turbo-Prop engine which powers it is the first Turbo-Prop to receive CAA certification for commercial use — a promise of early application in peacetime commercial passenger and cargo service.

**ALLISON DIVISION OF GENERAL MOTORS**  
Indianapolis, Indiana

Builder of Turbo-Jet and Turbo-Prop Aircraft Engines



AMERICAN BUILT FOR THE NEW ERA IN AIR TRAVEL

The AIRCRAFT YEAR BOOK

COMPARATIVE TRANSPORT SAFETY RECORD

Passenger Fatalities per 100,000,000 Passenger Miles  
(Source: Air Transport Association)

	1946	1947	1948	1949	1950	1951	1952	1953	1954
<b>Domestic Scheduled</b>									
<b>Air Lines</b>									
Fatalities .....	75	199	83	93	96	142	46	86	16
Rate .....	1.24	3.21	1.30	1.30	1.10	1.30	.4	.60	.09
<b>Buses</b>									
Fatalities .....	140	1.40	120	120	100	130	100	NA	60
Rate .....	.19	.21	.18	.20	.17	.22	.16	NA	.11
<b>Intercity Railroads</b>									
Fatalities .....	116	74	52	32	184	126	14	31	23
Rate .....	.18	.16	.13	.09	.58	.41	.04	.10	.08
<b>Pass. Autos &amp; Taxicabs</b>									
Fatalities .....	15,400	15,300	15,200	15,300	17,600	21,000	22,600	NA	22,500
Rate .....	2.5	2.3	2.1	2.1	2.2	2.4	2.8	NA	2.6

N. A. Not available.

ASSETS AND LIABILITIES

Domestic Trunk Airlines 1948-1953

(Source: Air Transport Association)

	1949	1950	1951	1952	1953	1954
<b>Current</b>						
<b>Assets</b>	\$175,472,186	\$204,018,828	\$286,240,499	344,115,976	333,527,000	\$358,375,000
<b>Flight Equip- ment—Net</b>	188,619,849	201,630,303	226,223,625	309,355,329	345,455,000	388,524,000
<b>Other Op. Property</b>	61,476,977	58,149,892	61,152,504	75,793,917	98,909,000	90,179,000
<b>Non-Operating Property</b>	2,704,375	1,117,230	758,591	714,939	258,000	192,000
<b>*Other Assets</b>	58,668,273	77,624,812	794,160	398,678	41,704,000	47,246,000
<b>Total Assets</b>	486,941,660	542,541,065	648,550,195	775,764,980	819,853,000	884,516,000
<b>Current Liabilities</b>	98,428,787	130,111,887	218,363,023	231,757,632	259,890,000	241,942,000
<b>Long Term Debt</b>	148,017,443	135,842,945	134,006,470	168,246,905	154,701,000	185,093,000
<b>Capital Stock</b>	123,710,057	123,467,063	120,286,647	145,132,929	139,615,000	139,360,000
<b>Capital Surplus</b>	56,289,876	57,499,411	63,698,098	81,882,841	88,455,000	91,845,000
<b>Earned Surplus</b>	35,285,887	64,365,672	96,249,920	130,653,833	121,455,000	149,346,000
<b>Operating Reserves</b>	3,635,427	3,970,701	3,682,245	4,169,446	4,252,000	5,796,000
<b>**Other Liabilities</b>	21,574,183	27,283,386	12,263,792	13,921,394	51,495,000	71,134,000
<b>Net Worth &amp; Liabilities</b>	\$486,941,660	\$542,541,065	648,550,195	775,764,980	819,853,000	884,516,000

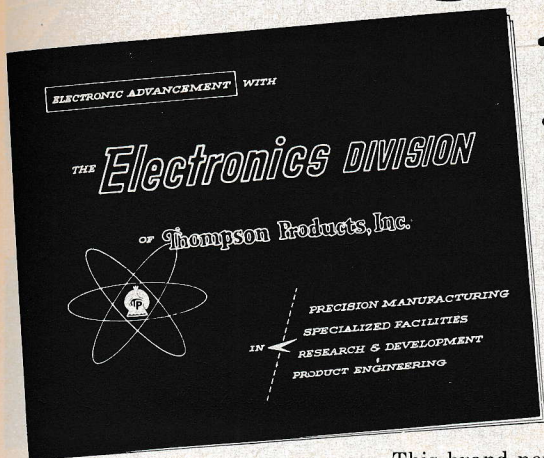
\*Investments and Special Funds and Deferred Charges.

\*\*Deferred Credits, Capital Account, General and Appropriated Earned Surplus.

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# Free Book



This brand-new book is your 1956 guide to the latest advancements to come from the expert electronic engineering and production staffs of Thompson, offering you the most modern facilities to help solve your every electronic problem.

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## HELICOPTER INSTRUMENTS AND CONTROLS DEMAND SPECIAL DEVELOPMENT

*...they've been getting it at Sperry's Flight Research Center, MacArthur Field*

■ One aircraft of the fleet in Sperry's flight research program is the Sikorsky S-55 you see above. This flying laboratory is completely equipped with the latest in helicopter instruments and controls. It is flown by Sperry test pilots, and its crew consists of Sperry engineers who note and record the performance of the instruments and controls under all flying conditions.

■ As a result of over 10 years' constant

flight research in this field, Sperry has now perfected a new flight control system which gives precise automatic stabilization and control of helicopters even under the most exacting condition of hovering. In addition to providing precise control, a new automatic stabilization system relieves the pilot of constant, fatiguing manual manipulations.

■ A helicopter integrated instrument system including a flight director has

been developed—and, also, a new engine rpm control.

■ Write our Aeronautical Equipment Division concerning your helicopter instrumentation and control requirements.

**SPERRY** *GYROSCOPE COMPANY*  
Great Neck, New York

*DIVISION OF SPERRY RAND CORPORATION*

A portfolio

of aviation

advertising

for 1955



# Top drawer developments

achieved through Convair's  
ENGINEERING to the Nth POWER

"TERRIER"  
U. S. Navy  
surface-to-air  
missile



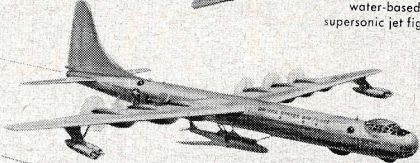
XFV-1  
first successful  
vertical-takeoff  
fighter



F-102A  
All-weather  
supersonic interceptor



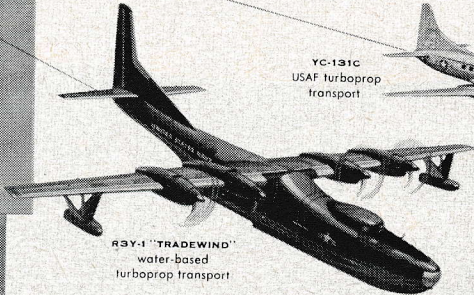
XF2Y-1 "SEA-DART"  
water-based  
supersonic jet fighter



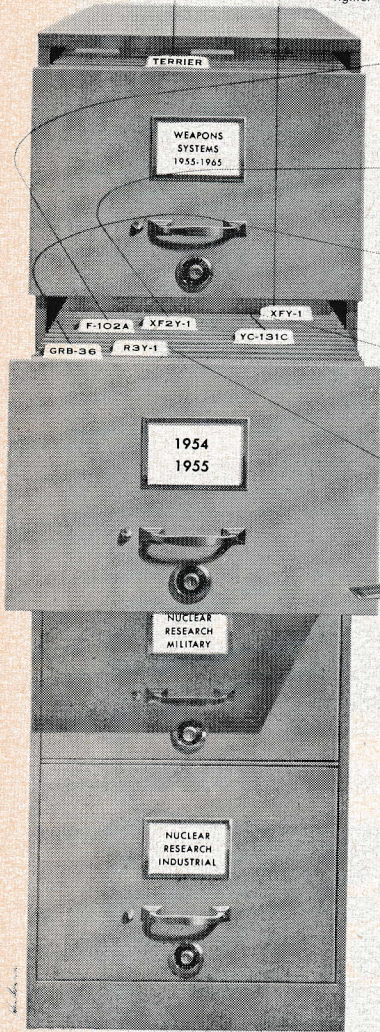
GRB-36 "AIRCRAFT CARRIER" — launches  
and retrieves fighters in flight



YC-131C  
USAF turboprop  
transport



RB3Y-1 "TRADEWIND"  
water-based  
turboprop transport



Around these *top-drawer* developments at Convair, the men who plan the defense of our nation are building entirely new concepts of military strategy. Only Convair has designed and produced all basic types of aircraft — fighter, interceptor, transport, bomber, and water-based. And now, Convair has attained leadership in producing guided missiles that meet the most exacting military requirements. For our national defense... for your security, look to *Engineering to the Nth Power*.

**CONVAIR** A DIVISION OF  
GENERAL DYNAMICS CORPORATION



## Freedom Has a New Sound!

ALL OVER AMERICA these days the blast of supersonic flight is shattering the old familiar sounds of city and countryside.

At U.S. Air Force bases strategically located near key cities our Airmen maintain their *round the clock* vigil, ready to take off on a moment's notice in jet aircraft

like Convair's F-102A all-weather interceptor. Every flight has only one purpose—your personal protection!

The next time jets thunder overhead, remember that the pilots who fly them are not willful disturbers of your peace; they are patriotic young Americans affirming *your New Sound of Freedom!*

PUBLISHED FOR BETTER UNDERSTANDING OF THE MISSION OF THE U.S.A.F. AIR DEFENSE COMMAND

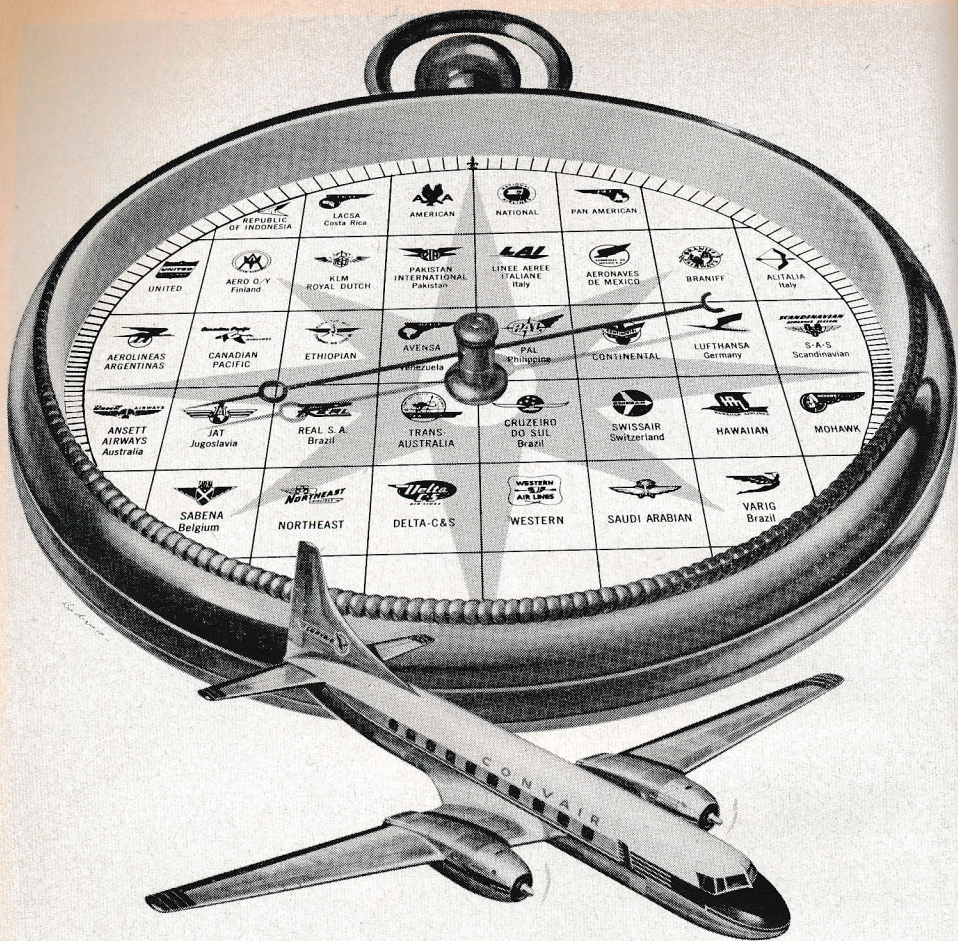
**CONVAIR**

A DIVISION OF GENERAL DYNAMICS CORPORATION

A portfolio of aviation advertising for 1955







## Travel Pointer: 35 leading airlines on all six continents now offer you the speed, comfort, and dependability of the Convair!

More airlines have chosen the Convair than any other modern passenger plane! Wherever you are, you'll find the Convair's performance is a model of engineering efficiency and dependability!

For your comfort there are built-in steps, self-service luggage racks, and many other features that are now being planned for the passenger planes of tomorrow.

The Convair offers you these advantages—today! Ask your favorite airline or travel agent to make your next flight a Convair—first choice all over the world!

### CONVAIR

A DIVISION OF GENERAL DYNAMICS CORPORATION



As a trainer, or a transport for the U.S. Air Force and Navy, the Convair is setting new records for versatility and performance...another evidence of Convair's Engineering to the Nth Power!

A portfolio of aviation advertising for 1955





put  
it  
there!

### THE NAVY GETS A "FLYING LST"

Now THE NAVY can "put it there" on distant beaches in *hours* instead of weeks. With Convair's R3Y, planning charts spring to life overnight.

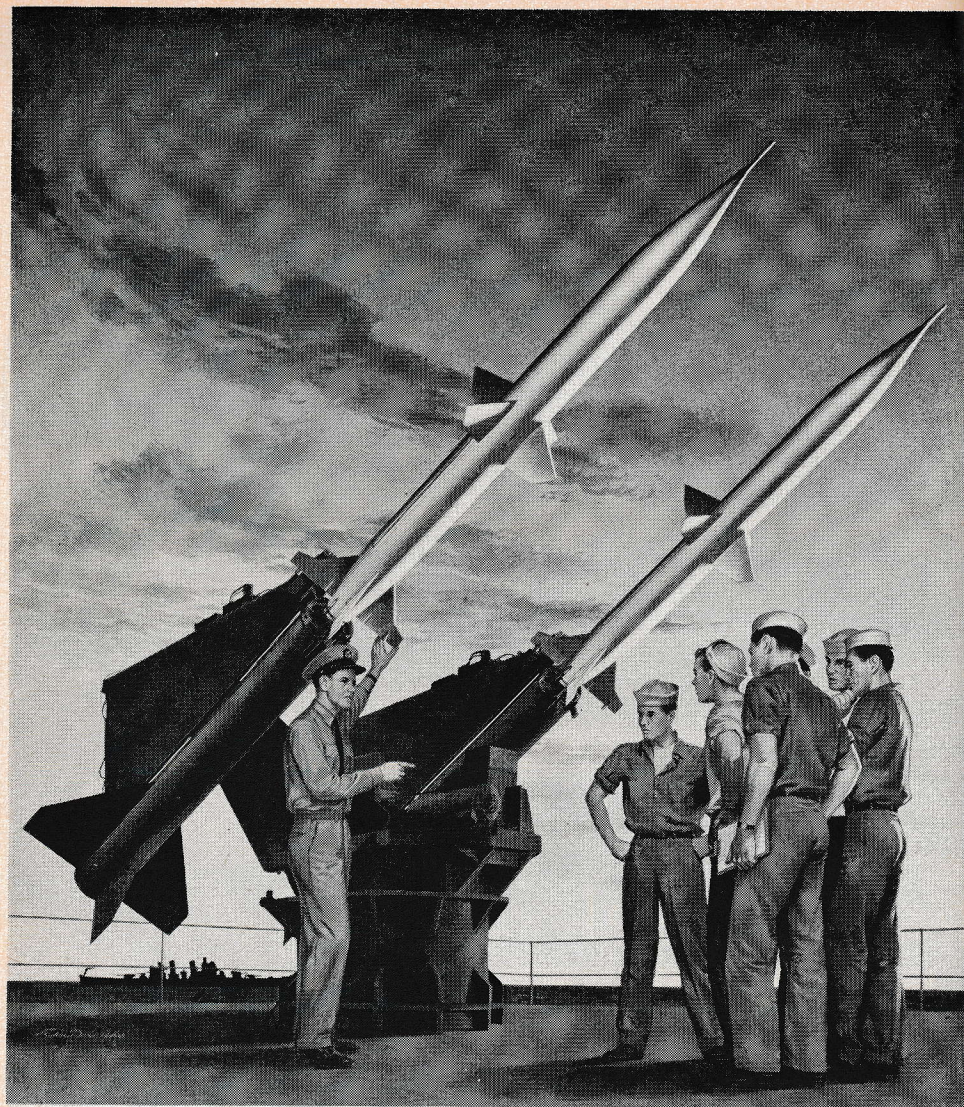
The R3Y *Tradewind* has globe-roaming range, turboprop speed, and boxcar capacity — and the seven seas are its landing fields. World's first water-based transport with land-based performance — the R3Y is another dramatic result of Engineering to the Nth power

**CONVAIR**

A DIVISION OF GENERAL DYNAMICS CORPORATION

A portfolio of aviation advertising for 1955





***ORDNANCE EXTRAORDINARY!*** The Terrier, the Navy's new all-weather anti-aircraft missile, is now being produced in quantity by Convair in the Naval Industrial Reserve Ordnance Plant of the U.S. Navy's Bureau of Ordnance. Responsible for supplying our Navy with the most effective weapons, the Bureau of Ordnance participates in vast programs of research, development, testing, and procurement. The Bureau of Ordnance facility at Pomona, California, managed and operated by Convair, is an outstanding example of government and industry working together to produce weapons systems for the defense of our country.

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*The New American Tradition...*

## Be Prepared

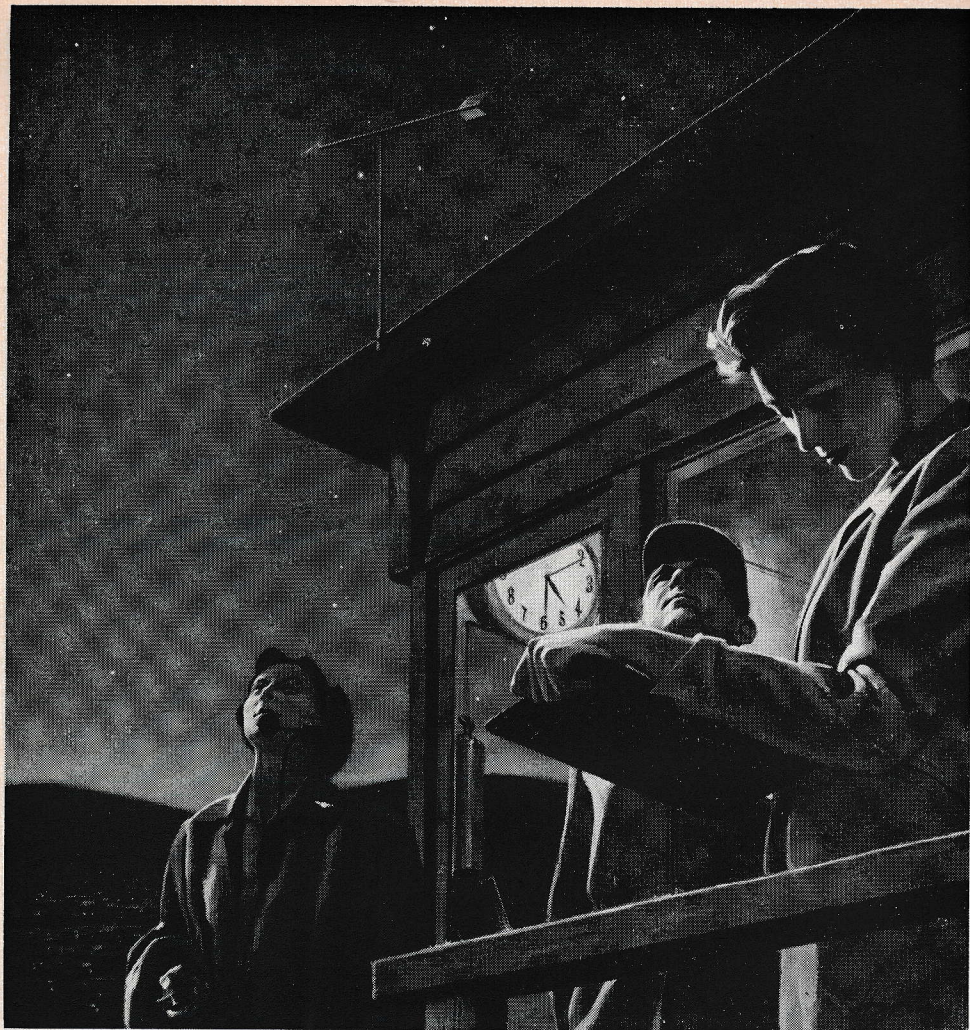
Convair is now producing in quantity the supersonic, delta-wing F-102A. With this day-or-night, all-weather Interceptor the U.S.A.F. Air Defense Command will *be prepared* to better fulfill its mission — the discouraging of attack through the effective protection of America! Through **engineering to the Nth power** Convair continues to *be prepared* to help assure peace and freedom by producing aircraft with the capabilities of the F-102A.

**CONVAIR** A DIVISION OF  
GENERAL DYNAMICS CORPORATION



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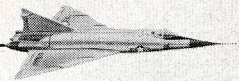


**Another town is safer tonight** because these trained civilian members of the Ground Observer Corps are scanning the skies to warn against possible enemy attack. But all over America there are many areas, perhaps your own, that do not have this protection because the G.O.C. is seriously understaffed.

In extending its vital work to all 48 states the Ground Observer Corps needs many thousands of new observers. You'll find the G.O.C. both interesting and exciting! A few hours a week of your spare time will help keep your home and country safe. Volunteer today...contact Civil Defense!

**CONVAIR** A DIVISION OF GENERAL DYNAMICS CORPORATION

Through the assistance of the Ground Observer Corps, the U.S.A.F. Air Defense Command is prepared for any alert with aircraft such as the Convair-built F-102A all-weather supersonic interceptor.



A portfolio of aviation advertising for 1955



# AVIATION EVENTS 1955



**A pictorial review of some of the out-  
standing events in aviation during 1955**

## **AVIATION EVENTS, 1955**

Science led aviation literally out of this world in 1955.

Top story of the year was the announcement in July by President Eisenhower that plans had been approved by this country to launch a small, unmanned, earth-circling satellite. The Martin Company, Baltimore, was awarded the prime contract for building the multi-stage satellite launching vehicle.

Anti-gravitation studies were launched by at least two companies, Martin, Baltimore, and Convair, San Diego, and widespread research went forward toward overcoming the thermal barrier by use of cermets — part metal and part-non-metal — superalloys, and titanium.

Hundreds of secret projects were underway toward improving the nation's defenses. Most notable in 1955 were intercontinental ballistic missile activities at Convair, home of the Hustler YB-60.

And during the year science teamed with industry in a multi-million-dollar program toward sound-abatement, particularly of jets.



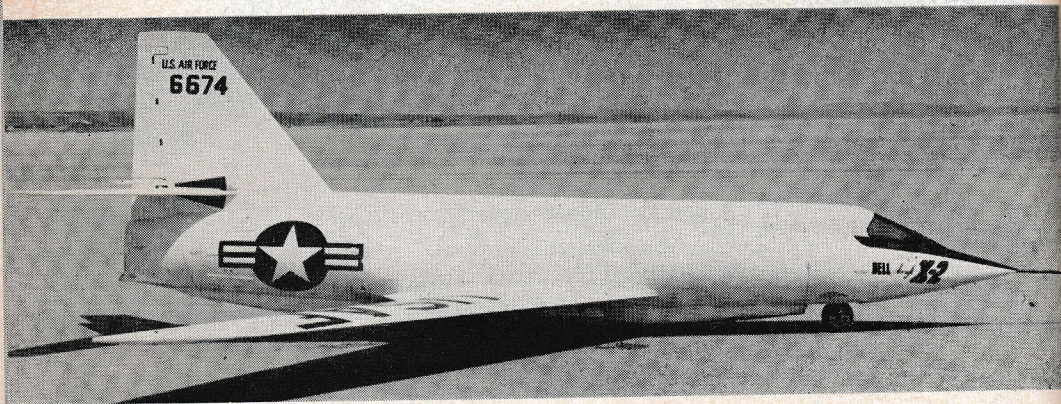
### • AREA RULE

NACA and the industry shared world wide acclaim for the area rule formula, resulting in the so-called "coke bottle" low drag fuselage design. Developed by NACA engineer Richard C. Whitcomb (See Awards), the formula was first applied to the Grumman F11F-1 Tiger and the Convair F-102. Success with this design led to the announcement that it would be applied to future high speed planes, both military and civilian.



## • FLYING PLATFORM

Revolutionary was the word for the Flying Platform, built by Hiller Helicopter for the Office of Naval Research, a wingless, propless ducted fan vertical takeoff experimental aircraft which made its first flight and national headlines early in the year.



## • BELL X-2

Designed to outrun the X-1A, Bell Aircraft's rocket powered, stainless steel X-2 was also airborne during the year. Its specialty will be to make thermal tests at high speeds.



Convertiplanes came out of the laboratories into the news. Bell flew its VTOL test vehicle, with two jet engines that rotate from vertical to horizontal for takeoff, landing and flight. The same company announced its XV-3, with rotor props for vertical lift which tilt forward for normal flight.

#### • CONVERTIPLANES



McDonnell Aircraft Corporation flew the XV-1, with an overhead rotor for vertical takeoff and a pusher type propeller aided by wings for horizontal flight. The plane, built for the Air Force, smashed the world's speed record for helicopters on its first conversion flight with a speed of more than 180 mph.



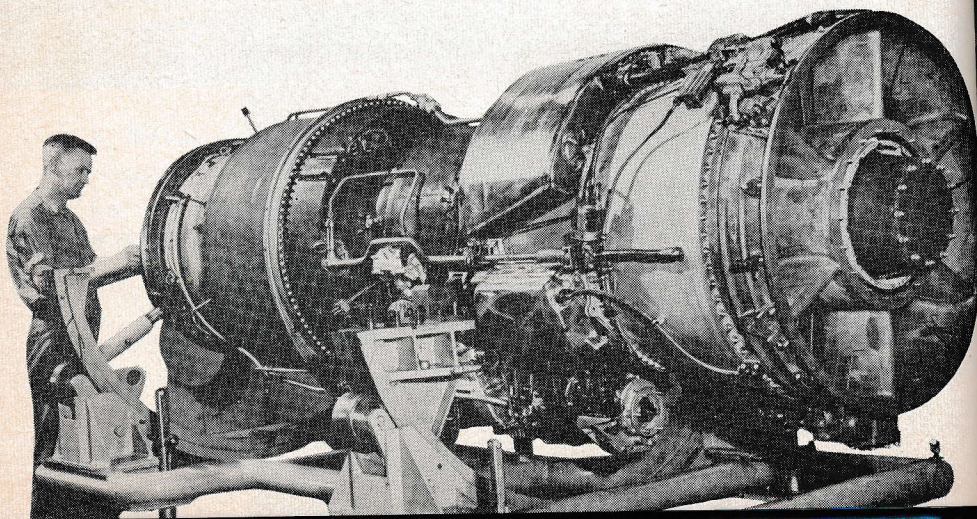


### • PANTOBASED AIRCRAFT

New ideas for conventional aircraft turned up, notably with the summer demonstration of the Fairchild YC-123 "Panto(all)base" gear developed by Stroukoff Aircraft Corporation. The gear is designed for landings on land, water, snow, sand or ice. Wing tip floats and heavily stressed land and water skis were features of the equipment. The Panto-base was developed for the Air Force Air Research and Development Command.

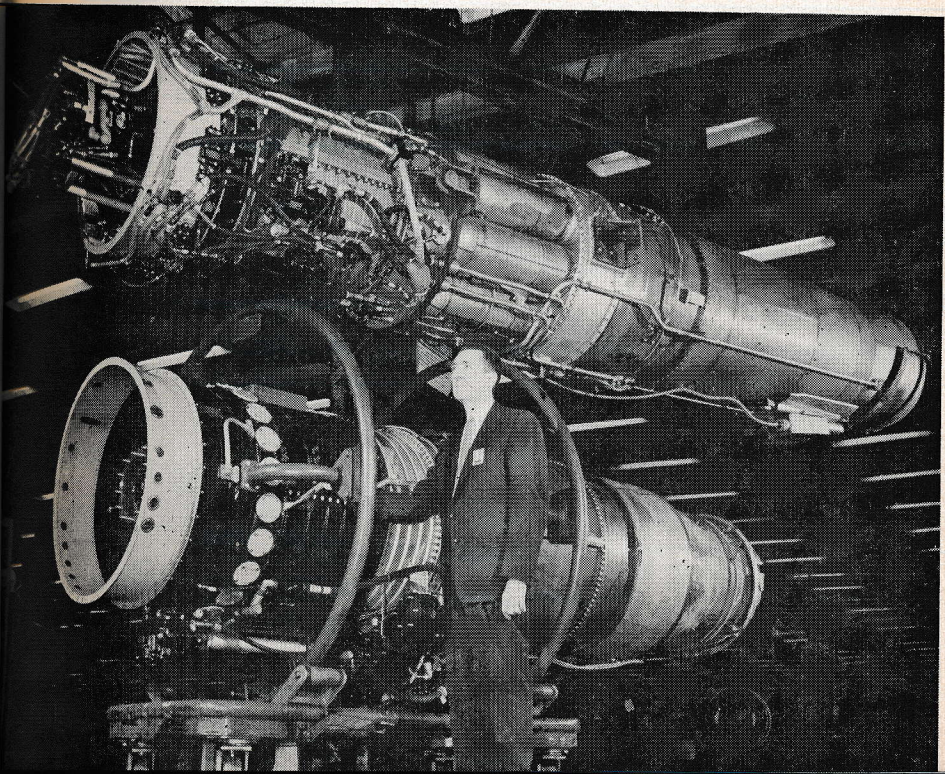
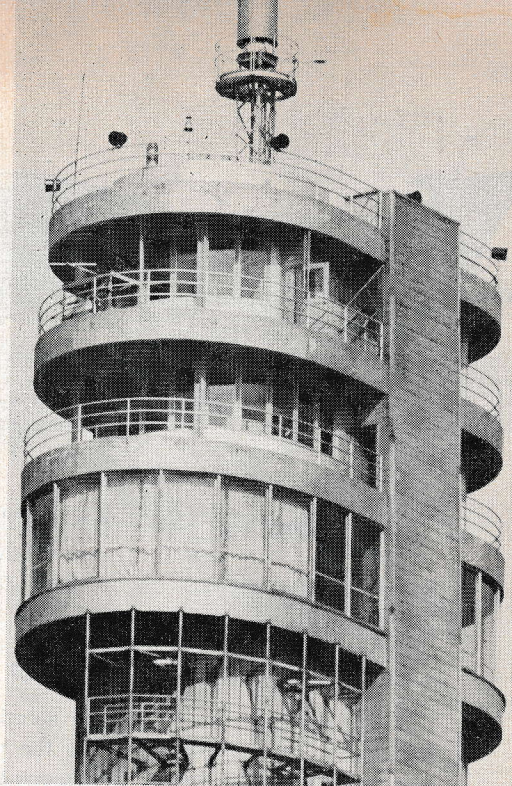
### • HIGH THRUST ENGINES

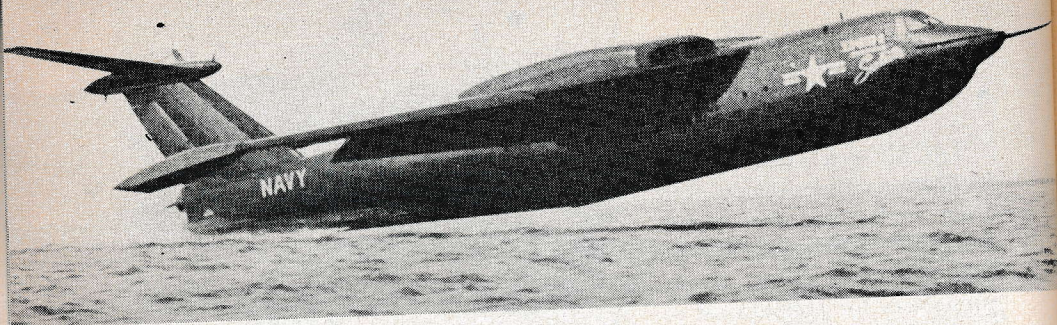
Although top thrust figures were still blanketed with security, it became generally accepted during 1955 that a number of the big ones were in the plus-10,000-pound thrust class. Pictured here are Pratt & Whitney's giant J57 which is in heavy production and the General Electric J73 (right).



## • TACAN

TACAN — a tactical air navigation aid — came out from under security into a world of controversy late in the summer. With strong supporters for and against it, the system nevertheless was a symbol of the long strides being taken by electronic devices toward realizing the age old dream of automatic, all weather air navigation. TACAN represents ten years of research by the International Telephone and Telegraph Corporation for the Navy and the Air Force.



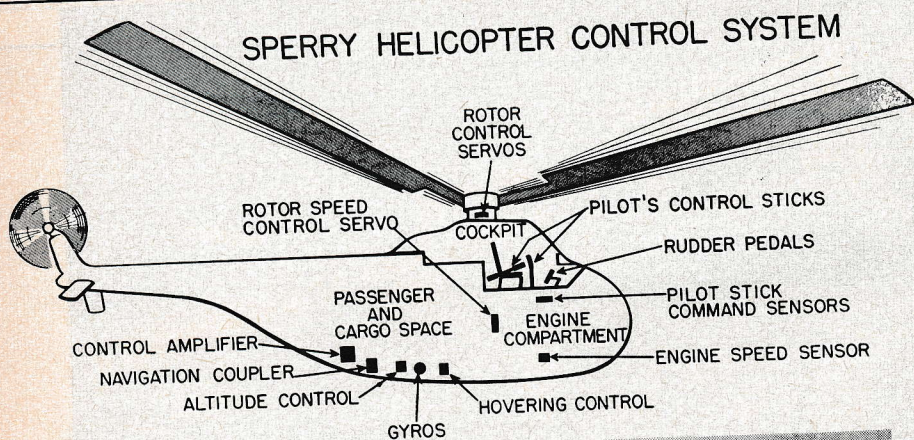


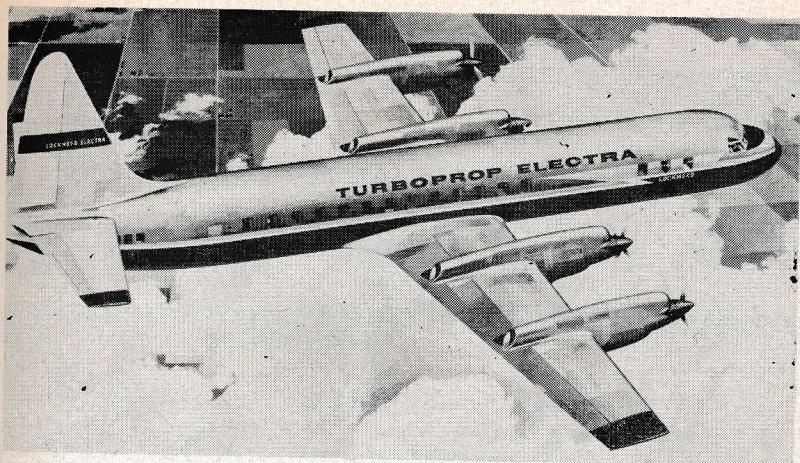
## • SEAMASTER

The 600 mph XP6M-1 Martin SeaMaster was unveiled to the public on January 5 by the Martin Company, Baltimore. The world's first multi-jet seaplane, built for the Navy, the SeaMaster made its first flight July 14.

## • 'COPTER STABILIZATION

Electronics was on its way to solution of another knotty problem—helicopter flight control—during the year. Notable was the first production model of a Sperry Gyroscope Company control system for helicopters, fall-safe and miniaturized. The system provides automatic stabilization at all times, even during engine-out glides, and opens up the needed all weather capability for rotor craft of every size.





## • NEW AIRLINERS

Close on the heels of Capital Airlines' announcement that they were purchasing 60 Vickers Viscount turboprop airliners and that the first of them would go into service during 1955, Lockheed Aircraft Corporation brought the U.S. into turboprop competition with its four engine (Allison 501's) 410 mph Electra propjet. Also started into production during the year was the Convair Metropolitan 440, an improved version of the famed Convair-Liner 240-340 series.



## • COMMERCIAL JET TRANSPORTS

At the same time, the nation's aircraft manufacturers and airline operators gave the first concrete indications that they were going to shoot the works on straight jet transports for U. S. air travelers of the future. Boeing's 707, which figured in the headlines in 1954, continued to make history with nonstop transcontinental flights around the five-hour mark. Douglas announced its DC-8 jetliner (right). Both will be powered with Pratt & Whitney engines. Major airlines responded with large-number orders.





### • FALCON IN PRODUCTION

Guided missile progress was as widespread as it was classified. Straw-in-the-wind was the news from Hughes Aircraft Company that its Falcon air-to-air missile was in production. Also outstanding because it is the smallest of the missiles now in development (6 ft. long, 6 in. in diameter), the Falcon is capable of tracking and bringing down any plane now known to be in production the world over.





## • ZERO LENGTH LAUNCHING

The world's first zero length launching of piloted fighter airplanes took place on January 13 at Edwards Air Force Base, Calif., using techniques and launching equipment developed by the Martin Company, Baltimore.

