

Aviation News

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JULY 15, 1946

REPORT FROM BIKINI—

A “smoke-clearing” evaluation of A-bomb’s revolutionary effect on aeronautical science—and the changes it demands in aircraft and accessory design and operation.

By SCHOLER BANGS

Aviation News Correspondent at Operation Crossroads

(Radio from Kwajalein)

CLEAR GUIDEPOSTS—many already existing but unheeded—pointing to America’s future military aviation were sharply defined at Operation Crossroads. Most significant among them indicate:

1. Complete obsolescence of the conventional airplane as a defense-offense weapon with 10 years . . .
2. Replacement, within 5 years, of today’s bombers with, first, very long range radio-controlled bombers and, second, very long range manned bombers capable of launching guided missiles fitted with atomic warheads . . .
3. Limited but continuing production development of piston engine and jet powered bombers and fighters now on assembly lines, with order sizes designed to maintain a manufacturing nucleus capable of quick expansion to war production . . .
4. Greater emphasis on maintenance for bombers capable of striking anywhere in the world . . .
5. Immediate advancement of worldwide, long range weather forecasting as an integral part of national defense . . .
6. Immediate re-evaluation of U. S. air forces and drastic revision of now-obsolete concepts of air war to activate new weapons and tactics.

With 2-3,000-mph. guided missiles a distinct possibility, only three atomic defenses appear possible: First, strong anti-aircraft and fighter defense using counter-atomic weapons to attack missiles or bombers; second, striking at atomic bases; and third, striking at atomic manufacturing centers.

Only the third is given much chance for success by military leaders, which points to interim aircraft pending guided missile development — fast, heavy bombers capable of hitting any place on earth and

returning, and possessing flight characteristics suited to radio control.

As to controls, Bikini established: That drones (or guided missiles) suffer no radiological interference; electronic circuits function normally flying through atomic clouds; engine power remains constant, with no evidence of oxygen starvation; turbulence at all levels within atomic clouds is probably less than continental thunderheads.

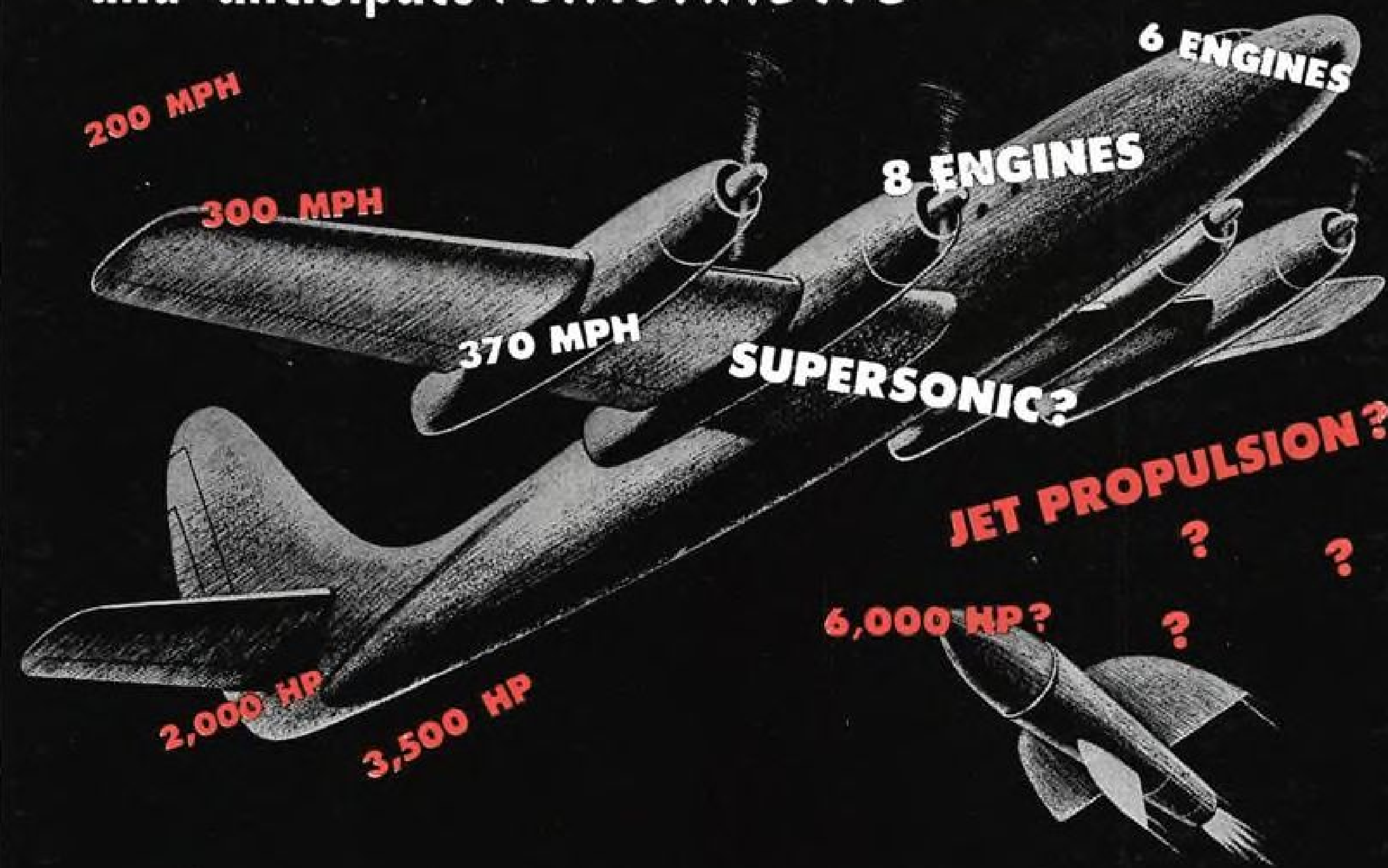
Atomic guided missiles will call for finest possible maintenance; loss of a single plane over enemy territory due to aborted maintenance might prove disastrous in giving the enemy a ready-assembled bomb which could be shot right back. Such maintenance will call for specialization rather than round-the-clock work on a given plane.

Weather forecasting will increase in importance with range—with extremely accurate 24-hr. forecasts a tactical “must.” Meteorologists, on basis of Bikini experience, hold hope for reasonably accurate 15-day forecasts in the foreseeable future.

While the Bikini test was essentially military, aircraft and accessory producers, research engineers, and airline operators can benefit from trends established here. One example: Military development of heavy drones leading to civil application of remote control techniques conceivably useful in operating crewless freighters having entire lift devoted to fuel and payload.

ALSO SEE these exclusive Bikini articles: Atom Bomb Pounded Cruiser (Pensacola) Into Twisted Wreck (Page 7); Drones Getting Nod for Bomb Missions (Page 10); Bikini Was Science Test, Observer Warns (Page 10); and Behavior Data Gathered in Bomb Test (Page 21).

Kidde Engineered Systems
fire-protect *TODAY'S* planes
and anticipate *TOMORROW'S*



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Kidde

THE AVIATION NEWS

Washington Observer



NAVY IS FOILED AGAIN—This week's installment in the dramatic undercover battle between those two giants, the U. S. Army and Navy, involves a Navy-promoted attempt to preclude the AAF, by law, from engaging in missile and rocket development. Navy was foiled. Sen. Thomas Hart of Connecticut, the ex-Admiral, had the audacity to tack his amendment on the 1947 War Department appropriation bill. It was knocked out in the crucial conference committee. Hart insists that missiles and rockets have made strategic bombing ineffective and have outmoded fighter planes as a defensive weapon. The AAF, therefore, is obsolete, Villain Hart hissed. This is a subject that is becoming very delicate in air force circles. Hart's chief concern at present is to keep the AAF from becoming the dominant branch of the services through domination of the missile and rocket fields. AAF officers, however, claim Hart's fears are unfounded. They point to their plans to spend only \$500,000 of their \$185,500,000 research and development funds for the next fiscal year on winged missile development. AAF emphasis will be on piloted planes and their engines.

CAB BILL LANGUISHES—Congressional action this year on the CAB-backed bill giving the Board authority to fix international rates appears doubtful. The measure was submitted to Congress last week by the Bureau of the Budget. Rep. Bulwinkle, chairman of the aviation subcommittee of House Interstate & Foreign Commerce Committee, and Sen. Overton, acting chairman of the Senate Commerce Committee, agree that the proposal is highly controversial and should be deferred until next year, in view of Congressional plans for adjournment as soon as possible. Only strong Administration pressure will provoke either Senate Commerce or House Interstate to act on the bill.

MAY RENUMBER ALL PLANES—Civil Aeronautics Administration is asking for industry comment on several new numbering systems for aircraft registration which will take care of the expanding fleet of civil planes for years to come. Serial numbers are becoming too large and are nearing six figures. One system, recommended by Dean R. Brimhall, CAA research chief, would permit 900,000 planes, and unlike the present series would classify the aircraft by general type.

NEW PROBLEM FOR CAA—Already plagued in its nationwide enforcement of more regulations for more planes with fewer employees, CAA could hardly be expected to make more work for its inspectors. But its placard on a new *Beechcraft* promises to set new demands for field men. A spec sheet for a golf bag

compartment states sternly, "Golf bag only will be carried."

IT'S HOT IN WASHINGTON—War Assets Administration last week came out with this sober proclamation: "Sale of Thunderbird Auxiliary Field No. 1, Glendale, Ariz., to the American Institute for Foreign Trade has been authorized at a price of \$407,000 less 100 percent discount." Inquisitive *Aviation News* scouts were told confidentially by government officials who refused to be quoted that the Institute, headed by former AAF Chief of Training, Lieut. Gen. Barton K. Yount, is getting the field free because of its educational status. But under the law, WAA cannot say so bluntly. The Institute, incidentally, may make other news soon.

VETS TO WIN C-54's—Airlines, including TWA, are clamoring for surplus C-54's, which were a drag on the market not many months ago because the air transport industry generally underestimated its passenger traffic market. War Assets Administration stocks last week were down to about 40 Model A's which, even though formerly considered undesirable, would be snapped up now by the certificated carriers. But veterans have top priority and probably will get them. The shortage has existed for some time but showed up only recently when WAA ceased leasing planes. Lessees then started exercising their purchase options, which removed leased planes at once from WAA's available lists. Further, prospects are very dim for more C-54's being declared surplus by the services. AAF's 1947 appropriation, for example, does not allow purchase of any new transports next year.

RESEARCH TANGLE—An attempt to unravel all of the Army, Navy and joint groups working on research and development is being undertaken by still another joint organization, this one the Joint Research and Development Board, headed by Dr. Vannevar Bush, director of the Office of Scientific Research and Development which died as of June 30. The new board was set up by the War and Navy Secretaries and presumably will be the top-drawer outfit to coordinate—not initiate—research projects. Two problem children, however, are the Aeronautical Board and Army-Navy Munitions Board, both established by Congress. One line in the release announcing the new board says: "Previously established joint boards, committees or similar organizations in the field of joint research and development will, however, be reconstituted as committees of the new joint Board." But to "reconstitute" ANMB or the Aeronautical Board would require legislation.

HANGAR FLYING

LOCKHEED

THE AIR-GOING BENCH

A weird flying test bench, with a name that sounds as if it belonged to an electric fan, was spawned by Lockheed engineers when they were figuring out the engine setup for the *Constellation*.

The test rig was a Lockheed Ventura with two *Constellation* power plants, and almost immediately it was nicknamed the Ventellation.

They used the Ventellation to check the findings coaxed out of conventional, earthbound wind tunnels and test benches. This plane showed them that their proposed arrangement (engine, cowlings and accessories in one "power



egg") made for easy maintenance: an engine can be changed in less than half an hour.

It also pointed up the economy and double safety of over-size engines. As every well-behaved engineer knows, small engines, running all-out, use up more fuel and get more wear and tear than large engines cruising at loafing power.

Result: The *Constellation* has 4000 reserve horsepower and can climb on any two of its four engines. It's this kind of serious funny-business at Lockheed that makes better planes worth talking about.

L to L for L

Lockheed Aircraft Corporation, Burbank, California

AVIATION NEWS

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News Digest

DOMESTIC

Army claimed a new world's "official" altitude record of 83½ miles for a German made V-2 rocket fired last week at the White Sands, N. Mex., proving ground.

Forecast of guided missiles with a range of 20,000 miles was made by Maj. Gen. Everett Hughes, chief of Army Ordnance.

First Navy helicopter squadron was commissioned at Floyd Bennett Field. The squadron consists of 17 helicopters.

United Airlines has taken over Navy research in all weather flying at the Arcata, Calif. experimental station.

Richard C. Hoy, assistant chief engineer of Piper Aircraft Corp., was killed during a test flight near Lockhaven, Pa.

FINANCIAL

Curtiss-Wright Corp. purchased the Victor Animatograph Corp. of Davenport, Ia. Victor manufactures equipment and materials for motion picture industry specializing in 16 mm. equipment.

1,000 Link trainers are being offered for sale by the WAA at prices ranging from \$1,200 to \$600.

Kellett Aircraft Corp. reports unfilled orders totalling \$5,400,000 compared with \$1,151,253 last December.

FOREIGN

Great Britain will spend more than \$132,000,000 for new transports with \$84,000,000 allotted to BOAC; \$36,000,000 to British European Airways Corp. and \$12,000,000 to British South American Airways.

Dr. H. Roxbee-Cox is now chairman and managing director of the National Gas Turbine Establishment which took over facilities and functions of Power Jets Ltd.

Fritz Koolhoven, well known Dutch aircraft designer and manufacturer, died in Haarlem, Holland.

First British designed, built and manned transport to make a non-stop flight from Gander to Heathrow took 10 hours and 35 minutes carrying 21 passengers. It was a York of British South American Airways on a chartered flight for Shell Oil Co.

No more American transports will be brought by Britain, Ivor Thomas, Parliamentary Undersecretary of Civil Aviation, told the House of Commons committee studying the British Civil Aviation Bill.



When completed Howard Hughes' eight-engine flying boat will cost \$20,000,000—\$15,000,000 of the taxpayers money and \$5,000,000 from Hughes.

The Joint Chiefs of Staff are supervising developments of a space rocket to penetrate beyond the gravitational influence of the earth and maintain itself in space as one of the earth's satellites. Chief military value would come from its use as a control center for guided missiles on a global basis.

The Export-Import Bank is considering offering credits to U. S. airlines engaged in international operations to insure them sufficient capital to replace obsolescent equipment. The Bank's view is that private capital may consider risks too high due to the rapid development of new equipment and the maintenance of our international air lines at top efficiency is a matter of national security rather than pure business.

Although Pan-American Airways retains only 20% of its former 45% interest in China National Airways Corp., it maintains complete operational control of the line which is now operating some 30 transports in China and between Calcutta and Hong Kong. Rates on the 1,750 mile Calcutta-Hong Kong run are 11½¢ a mile for passengers and \$4.26 a ton mile for freight. All flights were suspended recently due to demands of Chinese employees for wage increases to meet the skyrocketing cost of living. CNAC officials refused to meet the demands and after a three-week suspension of operations resumed limited service using Chinese Air Force maintenance personnel who are not familiar with transport type planes.

The aircraft industry will watch with interest Wright Field's heretofore unannounced project to fully evaluate all structural stresses in a ditching airplane. B-17's will be used, and now are being fitted extensively with recording strain gages. Results are expected to be extremely valuable as a guide to manufacturers in building into future passenger transports strength to resist or absorb the impact of water landings.

Matson Navigation Co. probably will start non-scheduled operations between the West Coast and Hawaii this month with two recently converted C-54's. Company is an applicant for a certificate between Honolulu and Los Angeles, San Francisco, Portland and Seattle.

Employment at Ryan Aeronautical Company will approach the 2,000 mark by late fall with present plans to add 100 additional production workers and technicians each month for the next four or five months.

Puget Pacific Planes, Inc., has placed a \$2,500,000 contract with Aircraft Supply & Equipment Co., Ltd., of Toronto, Canada, covering distributorship of the *Wheelair* 111A personal plane, for Quebec, Ontario, Labrador and Newfoundland for a five-year period.

A DC-4 completed a test flight from London to Johannesburg, South Africa, in a total elapsed time of 33 hours. Actual flying time for the trip, with stops at Tripoli, Khartoum and Misumu, was 27 hours. The test was made by South Africa Airlines as a preliminary step in establishing a regular schedule between London and South Africa.

Aircraft Mechanics, Inc., of Colorado Springs, Colo., has been selected by Douglas Aircraft Co., Inc., as the prime manufacturing source for Douglas-designed servicing equipment. The step is part of an extensive Douglas service program to assist the company's airline customers in the procurement of service, maintenance, overhaul, and ramp equipment.

Aero Industries Technical Institute in Los Angeles, will finish moving to its new \$250,000 site at the Oakland Municipal Airport in time to receive its first students on September 2. An enrollment top of 1,000 has been set.

Tests are currently being conducted by NATS engineering officers to check on the smoking hazard in *Skymasters* carrying belly cabin fuel tanks. A combustible mixture analyser is being used on test flights to determine whether vapor leakage is serious enough to create a potentially explosive air-gasoline mixture.

Dependable Power for Both



Again it's Pratt & Whitney power for postwar aircraft. Now it's the Consolidated-Vultee 240 and Martin 202 and 303. Each of these new aircraft, capable of carrying 30-40 passengers at 300 m.p.h., will be powered by two R-2800 dependable Double Wasp engines.

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Aviation News
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July 15, 1946

Atom Bomb Pounded Cruiser Pensacola Into Twisted Wreck

Aviation News correspondent at Bikini views effects of blast on once-mighty ship; steel decks pounded concave as if by giant fist.

By SCHOLER BANGS

Radio to Aviation News

Kwajalein—Walk the littered decks of the stricken heavy cruiser USS *Pensacola*, ten thousand tons, and be convinced that if the Bikini atom bomb was a "dud" no enemy power should want a similar sample of U. S. atomic might. As guests of Navy Secretary Forrestal twelve of us were flown to Bikini to inspect the target ships.

The bomb's unbelievable jolt, a side punch delivered at an angle from blast center, knocked her funnels down; left after-deck shambles; pounded mid-deck into concave saucer; stripped thick steel battle hatches and doors from hinges and tossed them aside or left them hanging askew; and ripped loose superstructure plates.

► **Steel Doors Battered**—Steel doors uniformly bore a characteristic concave depression by blast, as if pounded in by giant fist but interiors of rooms beyond the torn doors seemed untouched. There was no sign of blistered paint or wave of flame. Desks and chairs were in order. Captain D. J. Ramsey, directing the cleanup crews, told us, "this was all done by blast—there was no fire except a small fire in stored goods on deck." He estimated that the ship might be repaired in four to six months by stripping it to the hull and rebuilding.

Ramsey believes that a crew sheltered below decks would have survived. The radiological action quickly dissipated but the spotty portions on upper decks still bore red warnings outlined by the Geiger crews. A brief launch tour showed the powerful *Nevada's* after structure battered comparably with its upper structures. Surviving ships

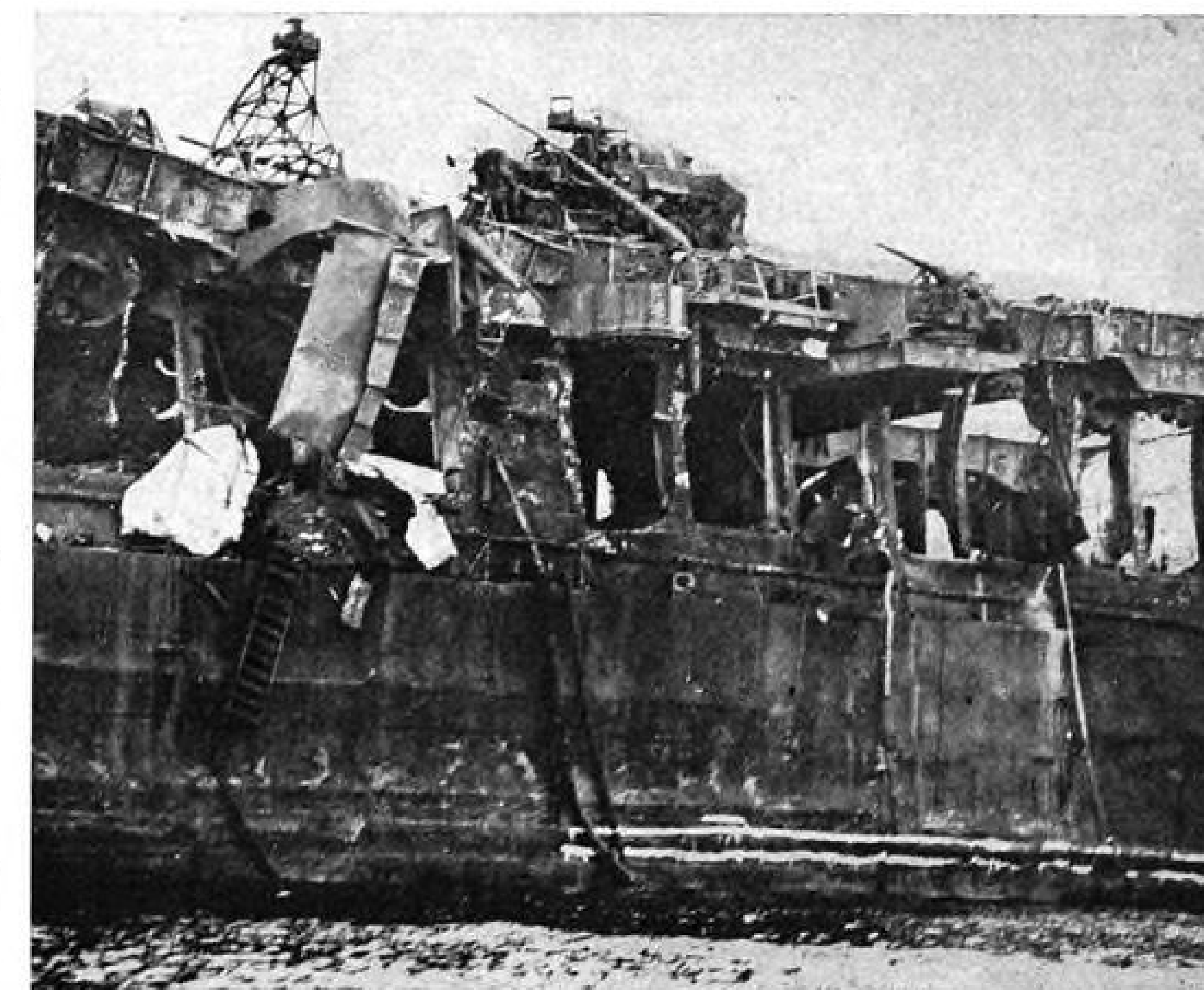
were damaged in varying degrees depending upon their distance from the blast center.

► **See Design Change**—Forrestal at Kwajalein said one transport on the target perimeter was fired. Observers of the blast were convinced that shortly afterward every ship in Lagoon showed plumes of smoke. We are unable now to say whether it was actual heat smoke, ionization debris or concussion dust. Forrestal, who had just toured ships, told us, "it is inescapable that this will be a provocation of ship redesign—particularly of upper structures."

► **Air Work Excellent**—Sweat and maintenance precision and training paid off to give air-participation in Operation Crossroads a near-perfect score in the first-Bikini atom bomb test.

There will be serious argument as to whether the bomb was a nuclear "dud" producing low-order fission by accident or plan; and whether the Navy for any of a number of reasons may have exerted influence in minimizing the blast power of the bomb, but the performance of Navy and Army aircraft and crews during the critical hours before and beyond the blast cannot be challenged. Of the 68 aircraft in the air when the bomb fell there were no abortives and only one plane was lost—a Navy F6F drone which spun in out of control fifteen minutes before the blast, possibly due to failure of a radio tube in its control impulse receiver or some other element in the remote control unit.

► **Clockwork Precision**—The clockwork precision of pattern flights by



CARRIER GETS BRUNT:

Stark damage sustained by *Independence* under terrific blast of fourth A-bomb is revealed in this close-up amidships showing torn and twisted structure of stricken carrier. (Associated Press photo).

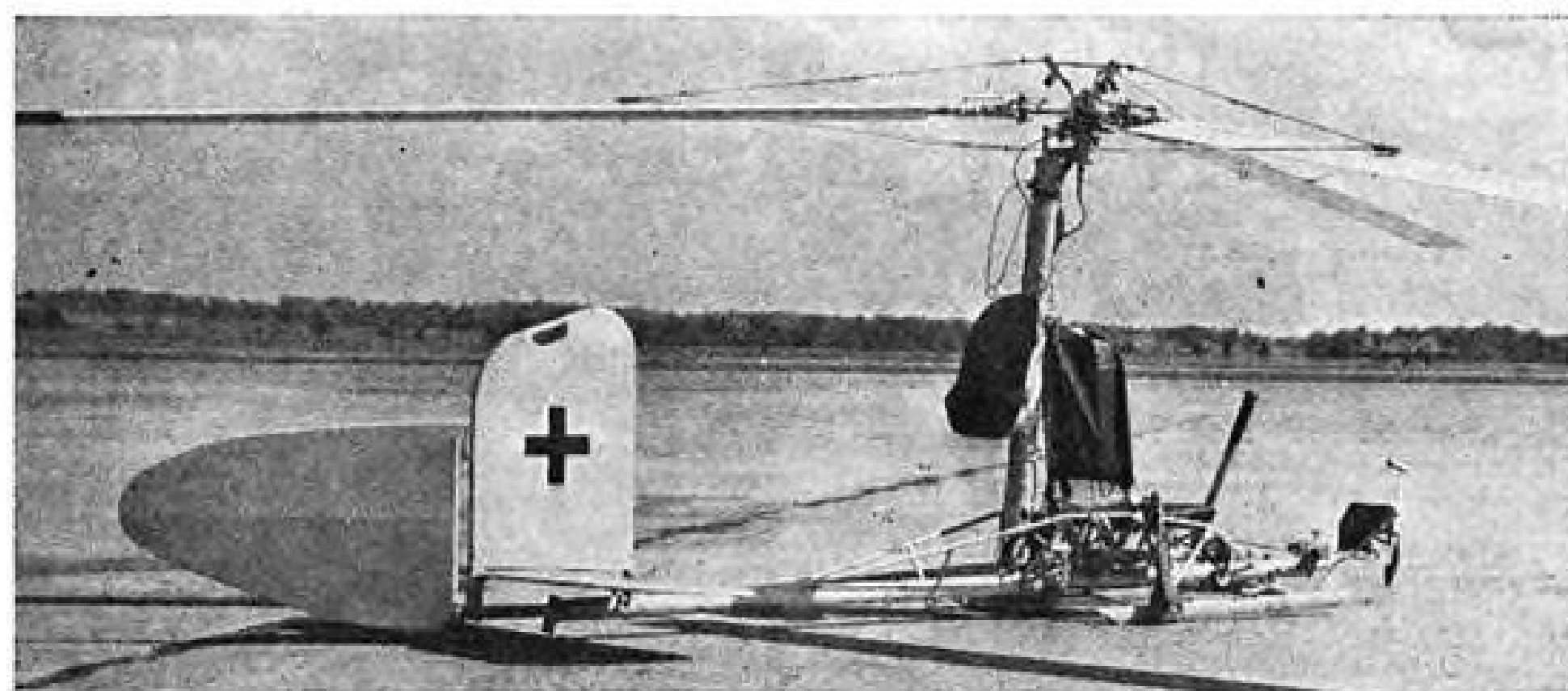
all planes and particularly the bomb dropping B-29 of Maj. Woodrow Swancutt undoubtedly will be useful commercially as well as militarily, dealing with dead reckoning and radar orbit-point navigation. Flying a pattern with a ten-minute approach to the target on the last leg, Swancutt's plane released the bomb only 14 seconds from the forecast time of drop.

"We put it right where we wanted it put," Swancutt said afterward. Because so many of the aircraft were "stockshelf" and some resurrected from surplus pools, the fact that there were no abortives must stand as a credit to Crossroads maintenance. Among the B-29s only the bombers, Swancutt's and those in reserve, were equipped with fuel injection engines. Lt. Col. Ulysses Sam Nero, chief of maintenance for the 509th Bomber group at the dawn of "Able Day" reported all of the 39 Army planes based at Kwajalein in commission and ready for flight and gave AVIATION NEWS his project's "success formula."

"Men in the maintenance crews had a job which interested each one personally—and ever since our arrival they've been putting in from twelve to fourteen hours a day doing their jobs."

AAF and Navy Endorse Omaha Aviation Fair

Both the Army Air Forces and the Navy have approved the plans for the World's Fair of Aviation and will participate in exposition and flight phases of the four-day event at Omaha, Neb., from July 18 through 21. The



NAZI ROTOR-KITE:

Employed as the "eyes" of submarines to spot possible targets from the air, this odd contraption used by German undersea boats has helicopter-type blades which are turned by relative air velocity. Designated the Fa-284, it was attached to subs by 1,000 ft. of cable. Pilot-observer had telephone communication with the sub and wore a life raft. In case of a crash dive, he was to jettison rotors and rudder and parachute to the water. (Martin & Kelman photo).

Atomic Question Marks

(Radio to Aviation News)

Kwajalein—From a grandstand seat 240 miles away the first Bikini atom bomb blast raised question marks as high as the fission cloud clearly visible above the Quonset roofs of this island out post. To some airborne observers returning from the scene, the blast was a "military disappointment," and damage to target ships far less than had been expected of a high-order fission. The pre-bombing belief of many that if the atom burst were as strong as that at Nagasaki, as had been forecast officially, and the fact that post-blast radioactivity was so slight that ships were able to put into Bikini atoll within 24 hours after the explosion, seemed to give significance to the remark here two days earlier of Dr. Karl T. Compton, chairman of the Joint Chiefs of Staff Crossroads evaluation board: "I hope that the press will see to

it that false impressions of the probable violence of the blast are corrected. There always is a possibility, perhaps on the order of one percent, that this might be a dud—that it will be an explosion rather than a full fission."

Dr. Compton hastened to add that a dud could produce an explosive blast which would be of such size as to be misinterpreted at first glance as a fission. He said that determination of whether the bomb performed as did the one at Nagasaki would depend upon what is determined only after a final technical review of all photographs, blast gauge records, and target damage evaluation after the blast. A member of Dr. Compton's board said he believed that a high order of fission had taken place but was not ready to explain the first indications of apparently restricted damage, dud or fission.

World's Fair will be the first large aviation event since the beginning of the war featuring both air and ground displays.

The services, which endorsed the Fair in letters to J. E. Davidson, president of the sponsoring organization, the Knights of Ak-Sar-Ben, will participate in flight demonstrations of late models of planes and tactics.

Member countries of the United Nations have been invited through the State Department to exhibit military and civilian aircraft along with the displays of American manufacturers. Proceeds will be devoted to the aid funds of the AAF

and the Navy and to local charitable and educational enterprises of Ak-Sar-Ben.

Approximately 500,000 persons are expected to attend the Fair from the Omaha area, in addition to others who will be in the city for the first postwar annual convention of the National Aeronautic Association. Manager of the event is Steadham Acker.

NWA Dispute

The President's emergency fact-finding board in Northwest Airlines' mechanics' dispute meets today (July 15) in St. Paul. The three members—Grady Lewis, Washington, D. C.; Frank M. Swacker, New York, and Dr. John A. Lapp, Chicago—are to report their findings within 30 days from July 3, day the President ordered the Board set up. Mr. Truman's action followed a strike of 946 mechanics and allied worker members of International Association of Machinists that grounded Northwest's planes for 24 hours. The men walked out when National Mediation Board failed to effect an agreement on their demand for 18½c. pay increase, but returned when the case was referred to the White House in accordance with law. Dr. Lapp also served on the emergency board which has just recommended terms for settling the four-engine pilot pay dispute on TWA and 12 other airlines.

Hughes Photo Plane Crashes on Test Hop

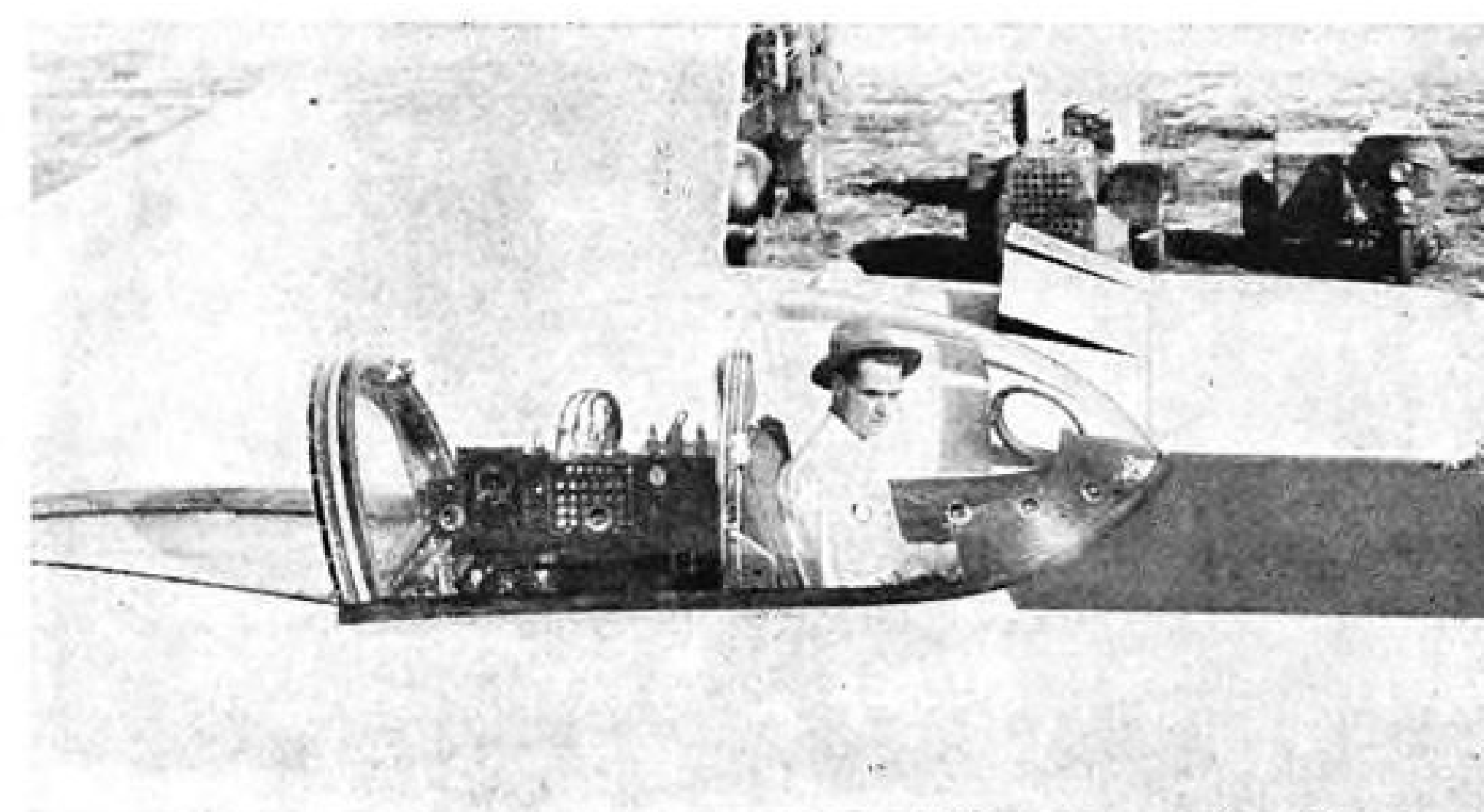
Power failure plunges craft into Beverly Hills homes; pilot's condition serious.

Details of the twin-boom, twin-engine, high-speed, long-range XF-11 built by Howard Hughes were made public last week, but simultaneously were overshadowed by an accident which injured Hughes seriously and destroyed the plane.

Begun as a wartime need for the AAF, with an expenditure of about \$3,000,000, and labored over for several years, the XF-11 was powered by two Pratt & Whitney Wasp Major engines of about 3,000 hp. each, turning eight-bladed contra-rotating Hamilton Standard propellers. A large plane for a single pilot, it had a span of 101 ft., and length of 65 ft. It was designed for speeds in excess of 400 mph. with a ceiling of over 40,000 ft.

Making the first test flight himself, Hughes started taxi runs in the plane early in the afternoon to test the action of some changes he had made in the rudders the night before. Still not satisfied, he restored the rudders to their original shape and made more runs.

►Had 1,200 Gals. Gas—Before the flight, the XF-11 took on 1,200 gal-



Hughes Photo Plane: First views of the XF-11, high-speed, long-range photo reconnaissance aircraft built by Hughes Aircraft in conjunction with Air Materiel Command. The pre-test flight picture shows owner Howard Hughes in the roomy, pressurized cockpit, which normally carries two persons.



lons of gas. Hughes then started the engines and let them idle while he examined the instruments. Apparently not satisfied with what he saw, he called an engineer over and they both examined the panel. When the engineer had climbed out, Hughes taxied to the end of the runway and took off. The right engine was smoking as the plane was air-borne.

Nearly an hour and a half later, Hughes radioed that he was having trouble with the landing gear and this information was relayed to Glenn Odekirk, general manager of the Hughes company, who had gone aloft in an A-20 to search for Hughes. Establishing radio contact with Hughes, Odekirk was told Hughes then would try to crash-land on the Los Angeles Country Club golf course. The plane fell short, hit four houses and burned.

►Gambled On Landing—Hughes wore a parachute, but gambled on being able to bring the plane down to salvage the tremendous research investment in time and money. He was quoted as saying in the hospital that "the power just gave way."

Suffering from a broken left leg, broken left shoulder, broken nose, eight broken ribs, third degree burns on the left hand and a possible fractured skull, Hughes condition was "fair" at press time.

New Appointments

Changes in personnel either presently or formerly official in character have been announced as:

Stokeley W. Morgan, until recently chief of the State Department's aviation division, has been elected president and a director of Air Carrier Supply Corp., Washington, D. C., effective Aug. 1. The company is a cooperative venture serving airlines.

S. Ralph Cohen has been appointed public relations officer of the International Air Transport Association, Montreal, Can. He formerly was managing editor of *National Aeronautics*, the magazine of National Aeronautic Association.

John O. Bell succeeds Morgan at the State Department, but with the title of acting chief of the aviation division. Bell has been with the

Department since 1931 and for more than two years in the Division of International Communications, of which aviation was a part.

Garrison Norton assumes the permanent directorship of State's Office of Transport & Communication policy, succeeding **George Baker** who recently resigned. He has been assistant director.

Drones Getting Nod For Bomb Missions

Day of piloted bombers ended says Col. Alness, chief of AAF Guided Missiles Group.

Radio to Aviation News

KWAJALEIN — Success of the heavy drone bombers used in the atom test has been termed by Col. H. T. Alness, commander of the AAF's First Experimental Guided Missiles Group, a convincing demonstration "that the day of the piloted airplane bombing mission has ended."

The First Experimental Group, based at Eglin Field, Fla., will initiate the development of new tactics for the use of air-delivered, radio-controlled missiles such as Azon, Rayzon, Roc and Tarzon. Alness and some 300 of the atomic bomb drone force, now stationed at Eniwetok Atoll, will leave for Florida shortly after the second Bikini blast. Alness organized the heavy drone group for Operation Crossroads.

► **No Reason for Crew**—Col. Alness told AVIATION NEWS that "We have learned that there is no reason for flying ten men in a bomber over a heavily-protected area when, by radio control, it can be converted

into a guided missile, a bomb with wings. Until the closing phases of the war we seemed possessed in going about our bombing wrong-end-to; building airplanes and then fitting bombs to the planes, when we might have been fitting wings and power plants to the bombs.

"It is quite likely that tomorrow's radio-controlled flying bomb, jet or rocket powered and carried by air to within striking range, will complete its mission with the speed of a V-2, at two to 3,000 mph. There is no question of preparing for this type of warfare, of its coming—it is here. And we're still playing around with antiques, B-29's and similar aircraft."

Col. Alness emphasized, however, that in his opinion there should be no abandonment of present heavy bombers, and bigger bombers now under construction. "But I am convinced that from here on out we should concentrate on guided missiles research," he added.

► **LeMay Favors Bombers**—A similar view was expressed here by Maj. Gen. Curtis LeMay, deputy chief of air staff for research and development. Although he declares that for an indefinite time the very long-range bomber, the XB-35 and XB-36, will be the backbone of national defense, he comments:

"When the time comes that the airplane is obsolete, I hope we can let go of it quicker than the Navy has the battleship."

One of the projects of Alness' group at Eglin will be the experimentation with guided missiles for defensive purposes. Gen. LeMay's view on this is cautious:

"Don't look for anything spectacular from guided missiles just

yet. We are not going into heavy production of these weapons before we have learned how to use them. During this period production orders will be necessarily small.

"But the time will come when the bulk of our fighting will be done automatically, I hope. I'm one of those who doesn't like to get shot at!"

Bikini Was Science Test, Observer Warns

McGraw-Hill editor says curve data was sought, not glorified bowling match.

(The following story was radioed from Kwajalein by Phil Swain, editor of Power magazine, and one of the four McGraw-Hill observers at the Bikini atom test.)

Kwajalein—From my stand on the sky deck of the press ship, *Appalachian*, about twenty land miles from the burst, the vast target fleet lay hidden below the horizon. First through welder's goggles, and then with uncovered eyes, I saw the initial rapidly expanding ball of fire and the rising of the great golden mushroom which ascended to a height of five miles in a few minutes, and ultimately up to seven miles.

The cloud was beautiful and impressive but many press men found less drama than they had expected in the initial bright flash and in the modest boom that reached their ears about 100 seconds after the flash. They forget that even the greatest things can be dwarfed by distance. At five miles exactly the same bomb burst could have been described as awe-inspiring without any exaggeration.

► **Warnings Ignored**—Despite many forewarnings that this was a laboratory setup, not a simulated attack against a fleet normally arranged in a harbor, news men were tempted (and some yielded) to play up a strictly technical operation as a sort of glorified bowling match with navy ships as the pins. By itself, the number of ships sunk or damaged means nothing, for results can be varied by spreading the ships or bringing them closer together. Despite much gossip to the contrary I think it obvious that this first test was reasonably well designed to carry out the Presidential directive that graded damage, from great to slight, should be obtained.

The true aim of these tests was

to secure a set of data in curves, rather than a box score—curves correlating pressure, temperature and damage to every ship and every part and every piece of equipment, with the distance from the bomb. It may be hard to make the American public understand how vital is such information. Without it naval designers cannot build ships or bases suited to an atomic age.

► **Cost Not Excessive**—The independent scientists on our sister ship, the *Panamint*, tell me that they expect valuable information in the field of pure science, particularly in radiation from high temperature sources, in oceanography and radioactivity, biology and botany. However, the big bosses of Operation Crossroads justify their experiment strictly as a source of essential military information. The general scientific data will be an important byproduct.

Operation Crossroads will cost less than one new battleship, but will give data essential for the design of new ships and bases and the determination of tactics.

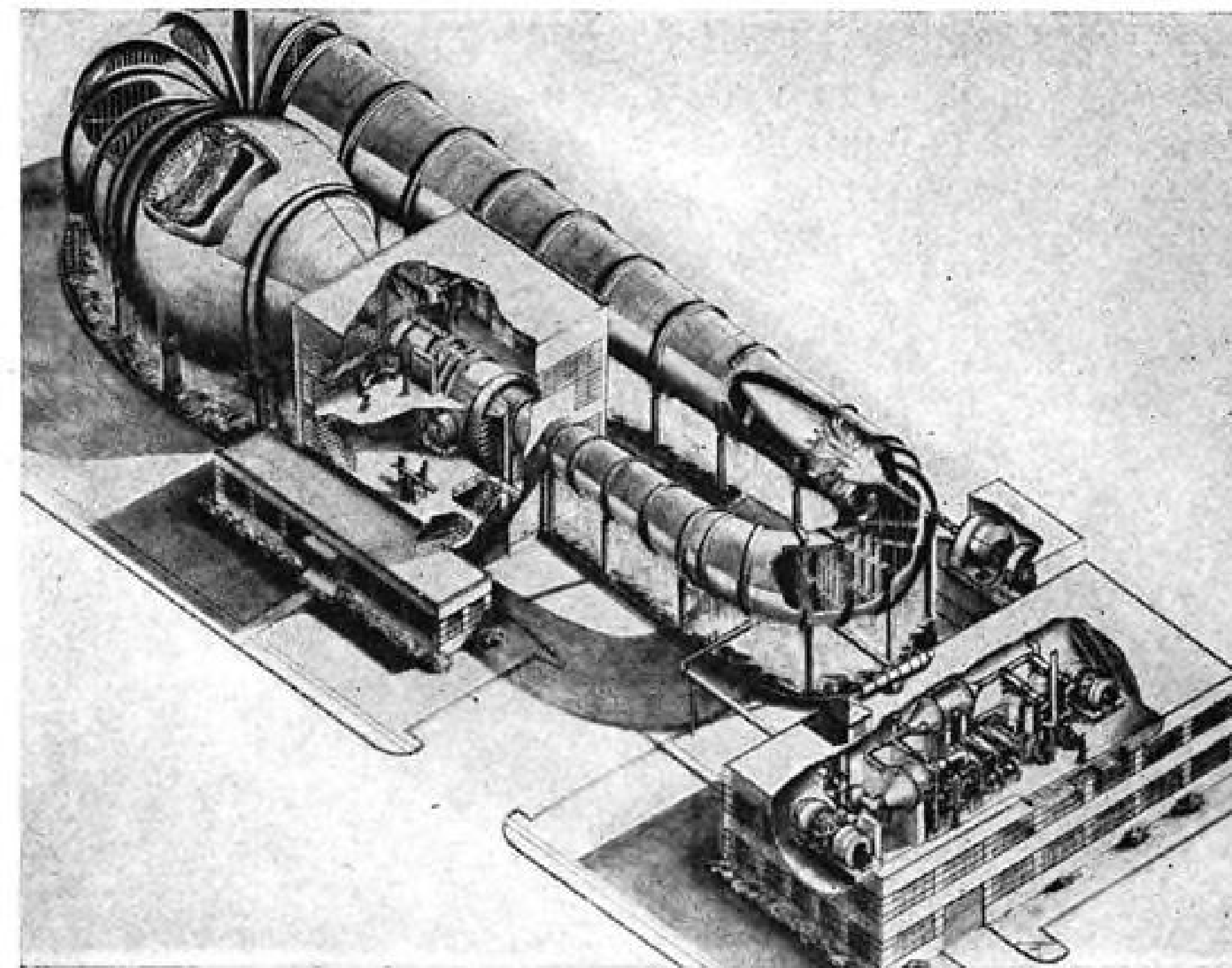
NAA Will Hold First Post-War Meeting

Going into its first national convention in five years this week, July 17-19, the National Aeronautic Association, the country's oldest aviation group, probably will emerge with a new organizational structure.

While no formal announcement has been made of plans to revamp NAA at the national level, the board of directors for some time has studied a plan to bring its executive organization more nearly in line with NAA's widespread activities.

A clue to what possibly may emerge from the meeting this week at the Hotel Fontenelle in Omaha, Nebr., is seen in recent concentration by NAA on co-ordinated efforts with other organizations, both in and out of aviation. This activity is typified by the joint aviation conferences on airports, private flying, air defense, safety and youth education.

Main business before the three-day meeting will be election of directors by the national councilors, about 700 of whom may attend the convention. Prior to the business meetings, delegates will be addressed by leading figures in aviation, including L. Welch Pogue, former CAB chairman; William A. M. Burden, assistant secretary of Com-



New NACA Wind Tunnel: Cutaway of the low-turbulence trans-sonic wind tunnel at the Ames Aeronautical Laboratory. Air is circulated by two 18-ton variable pitch co-axial fans powered by electric motors totaling 11,000 hp. Because of the high pressures in the test chamber, all readings are removed to a master-control panel outside the chamber. Also because of the high pressure, as well as the speed of the flow, designers of the tunnel ran into a cooling problem. Air is cooled during compression by water-cooling coils. After compression, cooling is accomplished by Freon. An additional water-cooling system sprays the top of the tunnel to keep the shell temperature down.

merce for Air; Robert Ramspeck, executive vice-president, Air Transport Association; Brig. Gen. Lawrence C. Carr, president, Institute of Air Transportation; and Air Commodore Frank Whittle, of Britain, inventor of the jet propulsion engine.

Senate Is Slow on Action For Five-Cent Air Mail

The Senate will be slow to act on the House-passed legislation reducing airmail postage from eight cents an ounce to five cents, it was indicated last week.

Sen. Dennis Chavez (D., N.Mex.), chairman of the Senate Post Office and Post Roads Committee, announced the opening of hearings on the measure, but said that final committee action would be withheld until the return to Washington of Postmaster General Robert Hannegan—which may not be for another month. Congress may adjourn in the meantime.

Chavez said that numerous private individuals have petitioned him for favorable action on the air-mail reduction, but that he expects railroad interests to request to testify in opposition to the reduction.

New Wind Tunnel Opened by NACA

Moffet Field installation designed for low turbulence flow; only one of its size in world.

A new wind tunnel which lessens one of the greatest deficiencies in tunnel testing, the turbulence of the air rushing through the test chamber, will be opened tomorrow at the Ames Aeronautical Laboratory of the National Advisory Committee for Aeronautics at Moffet Field, Calif.

This low turbulence wind tunnel, the only one of its size in the world, is considered to be in the nature of a comeback for wind tunnels and at least a partial answer to criticism recently directed at this form of aerodynamic testing. For the first time it will be possible in a tunnel to test models under conditions closely duplicating free-air studies.

► **Surmount Difficulties**—Recognizing the limitations of wind tunnels, already engineers at The Glenn L. Martin Co., and at California Institute of Technology have begun free-air testing of airfoil sections (AVIATION NEWS, June 24, 1946).



COMPOSITE-ENGINE DOUGLAS XA-26F:

Fitted with a GE I-16 turbine in space formerly given to rear gunner's compartment, in addition to standard P&W Double Wasp power plants, this modified Douglas Invader recently set speed record of 413 mph. between Dayton and St. Louis carrying 2,205-lb. payload. Auxiliary I-16 unit was operated for 45 min. during flight. Installation was made during war to add 35 mph. to craft's 360-mph.-plus top speed. Thrust is provided through a 19-ft. tube of 17 in. dia. Note intake in top of fuselage behind wing, and exhaust orifice under rudder. (Martin & Kelman photo).

These experiments were designed to surmount, among other difficulties, the turbulence that has now been greatly reduced in NACA's tunnel at Moffet Field.

Key to the low turbulence feature of the tunnel are eight fine-meshed wire screens spaced nine inches apart. Placed in the large spherical bulge ahead of the 12-foot-diameter test section, each screen is more than 60 ft. in diameter. These screens eliminate nearly all of the swirling in the air stream by slowing down the air until it moves through the screens at only about 20 mph.

Leaving the screens, the stream passes into the much smaller throat. This squeezes out more of the turbulence, but at the same time accelerates the air to the speed necessary for testing purposes.

New Tunnel Better—Once before, NACA managed to achieve low turbulence by the same method but in a much smaller test section—only 18 inches—at the Langley Field Laboratory. From this tunnel came the historic low-drag laminar-flow series of airfoils. The new tunnel is expected to extend the range of experiments with laminar-flow.

Drawback of the Langley low-turbulence tunnel is that because of its size it has only two-dimensional air flow, that is, the airfoil extends across the chamber into the walls, and it is not possible to test flow of air toward and away from the fuselage.

With its 12-foot test section, the Ames tunnel cures that weakness. Using models of 10-foot wingspan it is possible to obtain data ap-

plicable to airplanes with spans as large as 60 ft. This is done by increasing the pressure of the air inside the tunnel to as high as six times atmospheric pressure. By reduction of the pressure to one-sixth that of the atmosphere, the flow can be stepped up to achieve trans-sonic speeds.

\$8,000,000 Philippine Air Aid Is Approved

The Administration's program to establish a \$24,264,566 system of airways on the Philippine Islands was slashed back to \$8,000,000 by the House Appropriations Committee.

The Budget Bureau requested a present-year appropriation of \$16,082,000 for the program, and planned its completion during the 1948 fiscal year with an \$8,182,566 appropriation.

Calling the Administration's plans for \$24,000,000 program "totally beyond reason," the House committee appropriated the Civil Aeronautics Administration \$8,000,000 to launch a program for establishment of a Philippine airways system, and stipulated that this sum "shall be the maximum of obligations that may be incurred for the entire accomplishment of the project."

The Administration, however, is expected to continue to push its program, authorized under the 1946 Philippine Rehabilitation Act.

Under present plans the program would be completed in July, 1949. While constructing air navigation facilities, CAA would concurrently train Filipinos in their operation so that by mid-1949 the system could be turned over completely to native personnel for operation.

The Administration's Philippine air system program would entail the construction of 35 new airports on the islands, plus necessary communications stations, instrument landing systems, VHF ranges, and housing. Program contemplates six airways:

(1) **Manila-Laoag** airway on Luzon, involving six stopping points, points—Manila, Bambam, Lingayen, San Fernando, Vigan, and Laoag. New airports would be built at the last four locations, costing a total of \$1,295,000. A \$83,300 instrument landing system and \$35,000 control tower would be installed at the Manila airport.

(2) **Manila-Aparri** airway on Luzon, involving five stopping points—at Cabanatuan, Baguio, Echague, Tuguegarao, and Aparri. New air-

New Transport Tested

First test flight of Consolidated Vultee Aircraft Corp.'s Model 110, the forerunner of the larger Model 240 which is now under construction, was made last week at San Diego, Calif.

Under careful observation was the performance of the two 2100 hp. Pratt and Whitney engines which, for the first time in a plane of this size, are equipped with jet stacks to utilize the thrust of the exhaust. This type of installation is planned for the Model 240, and also for transports of several other manufacturers. The company reports the engines were "surprisingly quiet," which would seem to answer a major objection that has been heard to this innovation.

The Model 110, with a gross weight of 36,000 lbs., is 3,000 lbs. lighter than the Model 240, some 30 mph. slower than the 240's 300 mph. cruising speed. Dimensions are nearly the same, with the 240 having a 73 ft. wing span, slightly longer than that of the 110.

ports would be built at the five locations, involving an outlay of \$3,433,092. A \$1,284,500 port would be constructed at Baguio.

(3) **Jolo-Manila** inter-island airway, with stopping points at Jolo, Jolo; Zamboanga, Mindanao; Dipolog, Mindanao; Dumaguete, Negros; Iloilo, Panay; Capiz, Panay; Ferrol, Tablas; San Jose, Mindoro; Pinamalayan, Mindoro; and Lipa, Luzon. New airports would be constructed at all points on the route, except Ferrol, at a total cost of \$4,376,433. A \$1,835,565 port will be constructed at Iloilo.

(4) **Del Monte-Manila** inter-island airway, with stop-offs at Butuan and Surigao, Mindanao; Tacloban, Leyte; Calbayog, Samar; Masbate, Masbate; and Legaspi, Anayan, and Paracale, Luzon. New airports would be constructed at the eight landing points on the route, costing a total of \$3,415,175.

(5) **Davao-Iloilo** inter-island airway, with stopping points Davao, Malayabala, and Del Monte, Mindanao; Tagbilaran, Bohol, Cebu, Cebu; Fabrica and Bacolod, Negros. New ports would be built at the seven locations at a total cost of \$3,300,975. A \$1,435,530 port will be built at Cebu.

(6) **Del Monte-Zamboanga** cut-off, running from Iligan to Cotabato, both on Mindanao. Cost of new airports at the two points would be \$799,310.

SPECIAL AIR SERVICES

CHARTER

NON-SCHEDULED

INTRASTATE

Protests Against CAB Rulings Mounting as Deadline Nears

Many non-scheduled carriers ignoring Boards position in effort to sidestep restrictions; Hoosier Air Freight asks hearings; others seek certificates.

Protests against CAB's proposed restrictions on non-scheduled carriers mounted toward the 750 mark last week, but about nine-tenths of the total consisted of coupons clipped from the Institute of Air Transportation's "Why Throttle Us?" advertisements in metropolitan newspapers (AVIATION NEWS, July 1). Board sources said less than a dozen letters were constructively critical and showed understanding of proposed Amendment No. 3 of Section 292.1 of the Economic Regulations.

With the July 22 deadline for comment approaching, there was indication that many non-scheduled operators were ignoring the opportunity to express their views to the Board. One group was seeking means to sidestep the regulations and refused to be perturbed by what its spokesman termed "the outcome of the argument between CAB and IAT."

Some See Loophole—A number of operators saw a loophole in the proposed provision that "an operation between two points shall not be deemed non-scheduled if the air carrier flies more than ten round trips monthly between such points for two consecutive months." They believed that in serving a large city like New York they could avoid the proviso by operating into La Guardia Field for ten days, into Newark Airport the next ten days, then to Teterboro for ten days.

Informed Board opinion was that this procedure would prove ineffective in establishing a bona fide non-scheduled operation. Observers pointed out that CAB can broaden its proposed definition of a point, now an area within a 15-mile radius of an airport, to include all of a metropolitan area such as New York City. Moreover, the 10-trip limitation is but one of many

criteria the Board has established or proposed for defining a non-scheduled operation.

Hoosier Offers Criticism—One of the first constructive criticisms of the proposed new regulation came from Hoosier Air Freight Corp., New York, non-scheduled contract cargo carrier. Hoosier asked a hearing before the amendment is made effective and commented that:

The proposed regulation is too broad, and fails to distinguish between two distinct categories of non-scheduled air carriers—those transporting persons and those carrying property only.

It is opposed to the public interest because it limits air freight service without full facts as to public demand for this service.

It involves financial hazards by imposing additional risks on the investing public without factual backing showing the need for additional regulation.

It is adverse to the interests of the veteran flyers and maintenance men in depriving them of well-compensated employment.

It is arbitrary in that it provides that an air carrier which operates between two designated points more than 10 round trips per month for two consecutive months shall be deemed conclusively to be engaged in scheduled operations.

One of the larger non-scheduled cargo lines, Hoosier has five C-47's certificated and three more being converted. Between April 15, when the first flight was made, and June 24, the company operated 26 flights covering 25,392 miles and 65,639 ton miles. Officers include J. E. G. Rogers, president, and Leland W. Miller, chairman of the board of directors. Other developments:

Willis Air Service, Inc., New York City, applied for a CAB certificate for scheduled carriage of property among 13 areas in the U.S.: Seattle-Portland, San Francisco, Los Angeles-San Diego, Denver, Minneapolis, Kansas City-St. Louis, Dallas-Houston-San Antonio, Chicago-Milwaukee, New Orleans, Detroit-Cincinnati-Pittsburgh, Boston-New York-Philadelphia - Baltimore - Washington, Miami and Atlanta. Each area has one to seven co-terminals in addition to major terminals. Thus the Kansas City-St. Louis area also includes the co-terminals Topeka, Wichita, St. Joseph, Mo., and Jefferson City, Mo. Willis operates five C-47's. A C-54 will go in service about Aug. 1. Company will apply soon for foreign routes.

Island Airways, Inc., Seattle, applied for a CAB certificate to conduct scheduled operations in the Puget Sound area and to Vancouver, B.C. Company has one Noorduyn Norseman and two Piper Cruisers and expects delivery shortly on two twin-engine amphibians, according to W. W. Paull, president. Points served would include Seattle, Port Angeles, Port Townsend, Anacortes, Friday Harbor and Bellingham, Wash., and Victoria, Sidney and Vancouver, B. C.



LINK CANOES BY AIR:

This load of 10 sectional canoes manufactured by Link Aviation Devices was flown to Washington recently by Link Aviation Devices, the manufacturer, aboard an amphibian. Pilot of the plane was Marilyn Link, sister of Edwin A. Link, president of the company. She is shown here with Raleigh Dawson, a Washington marine dealer.



Low-Turbulence Key: Giant close-meshed wire screens such as this stretch across the spherical section of NACA's new Moffett Field wind tunnel and largely contribute to the diminution of the turbulence found in high-speed wind tunnels.

Western Continental Air Lines, Inc., Grand Central Airport, Glendale, Cal., during April and May operated 31,688 revenue plane miles and carried 85 passengers 85,240 miles. Company, which carries passengers only on a charter or individual contract basis, operates one Cessna T-50, one Grumman G-44A and one Lockheed 10A. Officers include William E. Candy, president; Rex Hardy, Jr., vice-president; and William E. Hughes, secretary.

Globe Freight Airline, Inc., Hartford, Conn., asked CAB certificate to carry cargo between Miami and Chicago, Miami and Detroit, Boston and Chicago and Boston and Miami.

Slick Airways, Inc., San Antonio, has shifted its Oklahoma City offices to Amarillo, Tex.

South East Airlines, Inc., North Carolina intrastate operator, carried 4,399 passengers 1,301,610 miles between Aug. 27, 1945, and June 26 of this year. W. C. Teague, president, announced. Company operates DC-3 and twin-engine Cessna equipment over short-haul routes to 18 North Carolina communities and employs 35 persons. Revenue miles flown increased from 15,896 in September, 1945 (first complete month of operation) to 116,717 in May of this year and to 184,152 in the first 26 days of June.

North Central Airlines, Chicago, plans to obtain a second plane to improve service along its recently-opened route between Milwaukee and Wausau via Madison and Stevens Point, Wis. One round trip daily is being flown with a new 21-passenger DC-3, according to Albert E. Padags, general manager.

Air Cargo Transport Corp., New York, filed with CAB requests for freight routes between 70 cities throughout the country now being served by the company on a charter basis. ACT would use DC-3's and DC-4's in the operation. Company now has 16 C-47's, of which ten are owned by the carrier and six are leased from War Assets Administration.

Comet Airlines, Inc., last week planned to open its non-scheduled service by carrying a shipment of glassware for the Anchor-Hocking Glass Co., Lancaster, Ohio, to F. W. Woolworth Co., New York City. Company is using a Noorduyn Norseman and within two months expects to acquire C-47's. Officers include W. J. Meyer, former Curtiss-Wright test pilot, president; Richard E. Reedy, Jr., and L. S. McAllister, vice-presidents; E. L. Coyle, secretary-treasurer.

Superior Air Lines, Ohio intrastate passenger service, has suspended flights. Line had been operating between Columbus, Cincinnati, Toledo, Youngstown and Chesapeake since May.

Albany Airways, Albany, Ga., has added Columbus, Ga., to its route between Albany and Atlanta. Daily service was inaugurated this month.

South Central Air Transport, Inc., Fayetteville, Ark., is making test flights in preparation for opening the first intrastate service in Arkansas. SCAT has one converted twin-engine Cessna and will begin operations on the first of a proposed eight routes when a second plane becomes available.

Mason-Dixon Airlines, Inc., New York City, has applied to CAB for a certificate to carry persons, property and mail between Norfolk, Va., and Detroit via Richmond and Roanoke, Va., Charleston and Huntington, W. Va., and Columbus and Toledo, Ohio. Company owns six Lockheed Lodestars and conducts non-scheduled operations, according to M. C. Wedge, president.

Nebraska State Railway Commission recently heard the application of Prairie Airways, Alliance, to operate two intrastate routes from Omaha to Scottsbluff. Commission on July 24 is scheduled to hear application of John E. Neylon, Lincoln, for three routes touching 42 Nebraska towns. Nebraska Air Lines, to be operated by Wendell Harding and James D. Ramsey, Lincoln, also proposes a state-wide system.

California Air Service, Oakland Municipal Airport, will have six converted Cessnas available for charter shortly, including special photographic and ambulance ships.

Parachute Air Cargo Co., Oakland Municipal Airport, has been organized by John Maggi, head of Security Parachute Co. Plan plans to deliver air cargo anywhere in California by parachute, the service being especially designed to meet needs of isolated communities in mountainous areas.

Plane Shuttle Service Begun Across Puget Sound

What may be the country's shortest airline started service July 3 when Bremerton-Seattle Air Lines, Inc., began scheduled passenger and express flights between Bremerton and Seattle, Wash., 14.2 miles from



IAA TRUSTEES:

These three leaders in the non-scheduled air freight industry are also trustees of the newly-formed Independent Airfreight Association of New York City (AVIATION NEWS, July 1). Left to right: Earl F. Slick of San Antonio, president of Slick Airways; Harry R. Playford of St. Petersburg, Fla., president of U. S. Airlines, and Robert W. Prescott of Los Angeles, president of National Skyway Freight Corp. Prescott is also president of IAA.

each other (across Puget Sound).

Organized by Albert Almoslino, president, the company — which originally planned to call itself Puget Sound Airways — operates two float-equipped Noorduyn Norsemen. Seventeen flights a day are scheduled, leaving Seattle hourly on the hour with extra flights at 7:30 and 8:30 a.m. and 5:30 and 6:30 p.m.

Passenger fare for the 10-min. trip is \$2.50 one way or \$4.50 round trip. The planes carry pilot and eight passengers or 1,500 lbs. of cargo. Packages are carried express, with a minimum of 35 cents up to 4 lbs. and an added charge of 3 cents for each pound over four.

Seattle terminus is on Lake Union at 1200 Westlake Ave. North, only a few minutes from the city center, while the Bremerton landing is on the waterfront at 2nd St. dock.

Almoslino, who flew the route in 1935 and 1936 before moving to Alaska, is one of three pilots. Others are Robert B. Willis and Garth V. Smith.

Farmers Air Plan

Establishment of a farmers' market to cater to air express and air freight shippers of perishable agricultural products is being considered in Florida. Delegates from 10 North Florida counties, including farmers, airline officials, produce buyers, county agents, home demonstration agents, frozen food handlers and seafood shippers discussed the plan at Perry, Fla.



Shuttle Service Starts: Bremerton-Seattle Air Lines has started regularly scheduled air express and passenger service between those two Puget Sound cities. President Al Almoslino is shown accepting the first package for the 10-min. flight.

"A-Q" (AIRCRAFT QUALITY) GEARS approach theoretical perfection. In airplane engines and other equipment, they assure extreme speed and efficiency and compact design.

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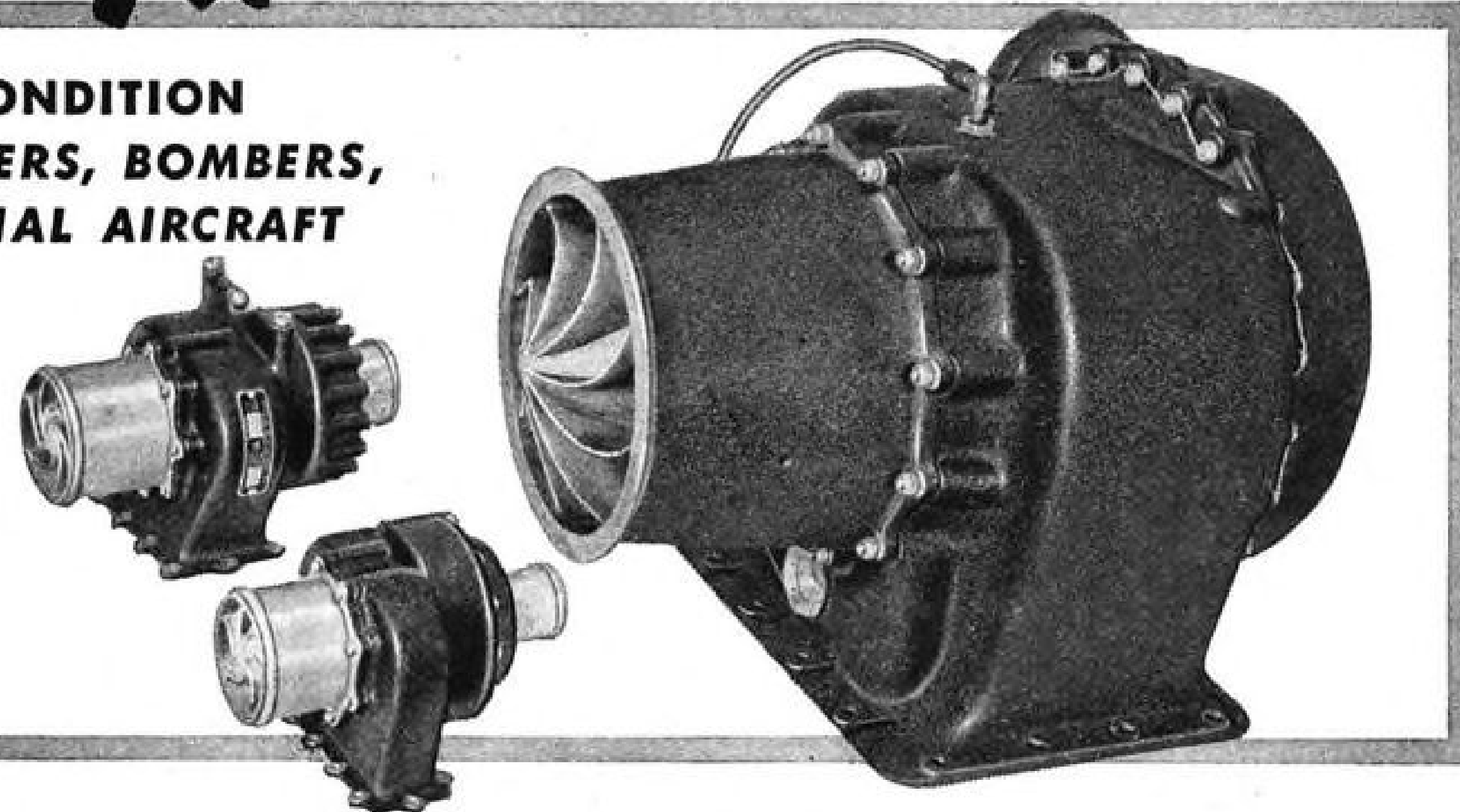
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Revolutionary New Development Makes Possible High Speed, Pressurized Flight

AiResearch Air Expansion Turbines make possible living room comfort in the pressurized cabins of the new Lockheed Constellation, the Douglas DC-6 and the Consolidated 240, three of America's fastest and most luxurious transport ships, soon to be in service. These turbines will be utilized in systems which cool the hot compressed air from the cabin supercharger before it reaches the pressurized cabin. The result is a comfortable, air-conditioned cabin at any altitude, at any speed and in any climatic condition.

AiResearch is the first to apply the principle of the expansion air turbine to aircraft airconditioning. It cools hot

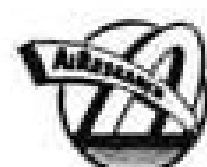
supercharged air by expanding it from high pressure down to cabin pressure and taking "work" out of it.

A complete line of air expansion turbines, both low and high pressure, weighing from 3 to 65 pounds and with temperature drops ranging from 45° to 135° have been developed.

Operating at speeds from 18,000 RPM to 100,000 RPM, the units incorporate a self contained lubrication system, and require air as the only source of power. The largest single turbine unit now in production will make available 12 tons of refrigeration for cooling cabin air.

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TYPE	AIRFLOW PER MINUTE	TURBINE WEIGHT	TEMPERATURE DROP	R. P. M.	SUITABLE FOR
Simple	7 lbs.	3 lbs.	135°	100,000	Jet Fighters
Simple	10 lbs.	5 lbs.	135°	85,000	Jet Fighters
Simple	20 lbs.	10 lbs.	135°	48,000	Jet Medium Bombers
Simple	80 lbs.	34 lbs.	45°	18,000	Comm. Aircraft
Boof Strap	65 lbs.	25 lbs.	110°	32,000	Comm. Aircraft
Boof Strap	100 lbs.	65 lbs.	125°	27,000	Comm. Aircraft



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PRODUCTION

Boeing, Lockheed Survey Public To Get Best Feeder Designs

New trend seen in poll of potential riders preliminary to transport production; *Saturn* aimed at short routes.

What is seen as a new trend in the formulation of specifications for transport planes—particularly those to serve small communities—is being noticed in the recent announcements by both Lockheed Aircraft Corp. and Boeing Aircraft Co. regarding their feeder planes, the *Saturn* and Model 417.

Departing from past practice, these manufacturers based their designs primarily on surveys and interviews with potential riders in the airplanes. In the immediate past manufacturers have designed planes on the basis of the needs of their direct customers, the airlines. Prior to that period, the aircraft producers first conceived plane designs, then tried to interest airlines in purchasing.

► **Trend Toward Surveys** — The present trend from a combination of former procedures, inasmuch as manufacturers — having gotten opinions of the riding public as well as the airlines—can now go to airlines with designs of planes the manufacturers can show are desired.

This method leads down a tortuous road that was pointed out by Lockheed's president Robert E. Gross in his announcement on the *Saturn*. First, Lockheed surveyed "hundreds of potential regional operators." Research market specialists traveled many miles throughout the country and interviewed prospective airline passengers.

Analyses of opinions from these two groups were then put before the engineers. The result was that 10 separate models of the *Saturn*, each with from 10 to 20 modifications, were necessary before the design seemed to meet the majority of the recommendations of those who had been interviewed.

► **Boeing Uses Research** — Before creation of both the *Stratocruiser* and the Model 417, Boeing retained a research agency that sampled a cross-section of urban population on such questions as "Which do you

think is less comfortable, a train or plane trip?" "In which ways do you think air travel is less comfortable?" The answers to these questions then were broken down according to age group and type of complaint. Boeing took the complaints and applied engineering principles to eliminating the structural and aerodynamic reasons for them.

Armed with statistics on airline passengers' likes and dislikes in airplanes, and, in Lockheed's case, an actual prototype of the proposed aircraft, both companies have opened their sales campaigns. Boeing's effort was kicked-off at a recent sales meeting in Wichita, where the 417 is being produced, which culminated a three-year program of study and development. Gross made his announcement at

a special gathering in New York.

With the *Saturn*, Lockheed is shooting at the feeder market with an aircraft which, in capacity, is not duplicated either on production lines or, as far as is known, on blueprints. Its capacity of 14 is about midway between that of Beech Aircraft's Model 18, and Boeing's Model 417. However, Boeing considers its Model 417 as a competitor of the *Saturn*, despite its capacity of from 20 to 24. The 417 can operate economically, the company claims, with but 12 passengers aboard.

Canadian National Research Group Establishes Test Base

A flight research base is being established by the Canadian National Research Council at the Royal Canadian Air Force station at Arnprior, Ont. While the Council will finance and operate the center, the RCAF will supply the planes, pilots and maintenance staff.

Created to furnish facilities for checking in actual flight data obtained in wind tunnels, the Arnprior base will be on a modest scale, with probably not more than 100 men and five aircraft.

The Council's division of mechanical engineering near Ottawa already has three wind tunnels, two horizontal and one vertical.



► **"Saturn's" Selling Points:** This rear view of Lockheed's new "regional" transport, the 14-passenger *Saturn*, illustrates some of the features on which the manufacturer is concentrating—high-wing for passenger visibility; near-to-the-ground fuselage so that passengers can enter from a three or four-step stool that can be carried in the plane, obviating necessity for large, expensive passenger-loading equipment.

Wright Lecture Cites British Research Lag

Wartime research curtailed by emphasis on production, lack of wind tunnels and enemy action.

Public admission that England lags well behind America in fundamental aerodynamic research is seen in the Thirty-fourth Wilbur Wright Memorial Lecture delivered recently in London by E. F. Relf, Principal, College of Aeronautics, Cranfield, England.

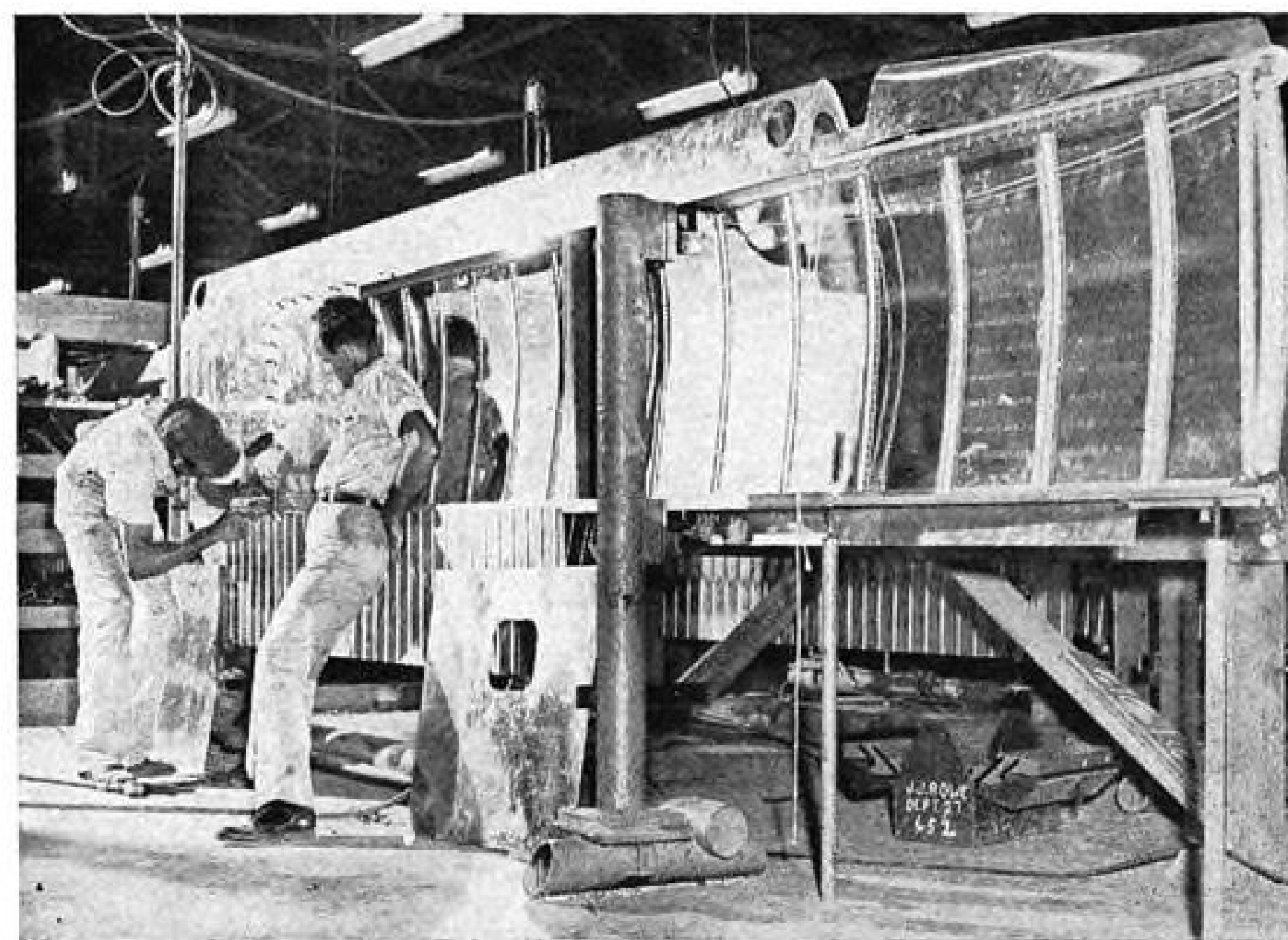
Although indicating clearly that English scientists are thinking much along the same lines as American, the lecture suggested an apology for the currently static position of British research while giving praise, both directly and indirectly, to the advanced state of fundamental aerodynamic research by our own National Advisory Committee for Aeronautics.

Relf expressed great faith in possible future experiments with boundary layer control in England at a time when Rohr Aircraft Corp. is completing construction of its M.O.-1, which utilizes the theory for both drag-reduction and lateral control (AVIATION NEWS, July 1).
► Cites Low Aspect Rates—He also believes that low aspect ratio, perhaps as low as one, offers promise for high speed flight at a time when Chance Vought Aircraft has announced the completion of four years' experiment with low aspect ratio design and coming test flight of its XF5U-1, end-product of such research (AVIATION NEWS, July 1).

Relf pointed out the difficulties of the wind tunnel at transonic speeds (Mach. No. 0.8 to 1.4) and suggested that "free drop" tests of weighted models might supply a satisfactory substitute, a transonic test method already in use by NACA's Langley Memorial Aeronautical Laboratory for many months (AVIATION NEWS, June 10).

► Pertinent Observations—Among Relf's observations were:

- The problem of supersonic flight is even more simple than subsonic flight problems due to the existence of a completely developed supersonic theory available from nearly a century of research into ballistics and the flight of artillery shells.
- Boundary layer control offers numerous advantages to supersonic flight; "sucking away" the bound-



SILVAIRE METAL WING:

Luscombe Airplane Corp., Dallas, Tex., has gone into production on an all-metal wing for its Silvaire personal plane making that plane, according to the company, the only all-metal lightplane in volume production. By employing a simple design for the wing, ease of production is obtained. The wing is composed of nine panels, all of which are replaceable.

dary layer near the trailing edge permits the use of very thick wings with no greater drag than thin wings, providing a solution to the structural problems of supersonic flight; "blowing away" the boundary layer near the leading edge of thin wing sections permits them to develop more than twice their normal lift without excessive drag penalty. It also shows promise for the reduction of drag at wing-fuselage intersections, thereby replacing drag-producing fillets.

• Flight research work on laminar flow profiles was provided during the war by a "wrap-around" profile mounted on a Bell Kingcobra.

England's wartime research work was drastically curtailed by the threat of enemy action, the loss of key personnel and the nation's preoccupation with production and applied research problems. Much of Britain's wartime research was allotted to turbo-jet engine problems and still remains a top priority item.

England's present backward status in fundamental aerodynamic research is due, largely, to a severe shortage of high-speed wind tunnels. England has only two supersonic tunnels as compared to about a dozen in the U. S. with others under construction and an equal number in Germany during the war.

Plant for C-47 Conversion Established in Oklahoma

Establishment of an aircraft modification and repair plant in Tulsa, Oklahoma, employing 2,200 persons, was announced by W. R. Barry and John F. Loughran of Oklahoma City, following completion of negotiations for 400,000 square feet of space in the former Douglas bomber assembly plant here. The new firm will convert surplus C-47 military planes into DC-3's for sale to commercial airlines. Barry was with the Douglas modification center at Oklahoma City as chief modification engineer and has also served with American Airlines, Inc., as a senior engineer, while Loughran is a former navy pilot familiar with aircraft repair and conversion work.

Ex-Cello-O Fuel System Ordered for Four Planes

The Ex-Cell-O direct fuel injection system for lightplanes (AVIATION NEWS, July 8, 1946) has been specified as standard equipment on three models of Continental engines, and four types of personal aircraft, the company has announced. The planes are the Culver Model V, Fleet (of Canada) Canuck, Commonwealth Trimmer, and All American Aircraft's Ensign.



WHATTA PEACH—
SHE'S A
BEECH!

Say, you'll be up in the air in more ways than one when that new Beech of yours goes humming down the runway!

If you're one of those modern-minded executives who knows that an airplane is good business, we're all for you. For our business is doing business with folks like you.

So—wherever you fly in the great Middle West, you'll find fields displaying the Orange-and-Black "66" Shield. That "66" stands for the finest possible in aircraft fuels and lubricants. They've been developed and distributed by one of America's most air-minded companies, for an ever-growing air-minded public. The Aviation Department, Phillips Petroleum Company, Bartlesville, Okla.



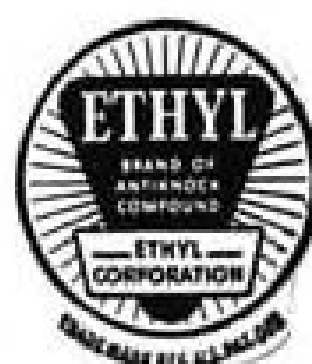
AVIATION GASOLINE



After hours, when aviation men talk shop, you'll sometimes hear them speculate as to what inventions or developments have meant the most to aviation progress. High on anybody's list should come modern high-octane gasoline . . . and the more powerful, more efficient engines that this gasoline has helped make possible. Many an increase in speed, range, payload, or ceiling has resulted from the improvement in the antiknock value of the fuels made available by oil refiners.

Ethyl Corporation
Chrysler Building,
New York City

Manufacturers of Ethyl fluid, used by oil companies
to improve the antiknock quality of aviation and motor gasolines.



AVIATION NEWS • July 15, 1946

Aircraft Behavior Data Gathered in Bomb Test

Kwajalein (Special to AVIATION NEWS).—A complete picture of the behavior of aircraft engines and accessories under the problematic flight conditions of atomic warfare is now in the hands of evaluation experts of Operation Crossroads.

The four B-17 Army drones which plunged through the blast cloud at altitudes of 13, 18, 24, and 30,000 ft., were recovered by their mother planes without mishap and returned to perfect landings at Eniwetok Atoll. One of them was "sizzling hot" with gamma radiation. Drone observers experienced no interference with radio, television, or airplane electric systems when the B-17s went into the cloud. Neither was there engine power loss. An early estimate of results gave no indication that turbulence within the cloud at any levels was sufficient to result in structural damage to the planes. Eight white rats, the first living things to ride as passengers through a radioactive curtain screening the doorway of an atomic age were alive and frisky when their cages were lifted from the B-17s.

Each B-17 drone had a torque nose on its No. 3 engine to provide stylus recording of any power losses experienced in the atomic cloud through oxygen starvation or other causes.

Conventional recording flight



'WINGS' ON THE WAY TO COMPLETION:

So confident was Northrop Aircraft, Inc., in the success of the XB-35 Flying Wing that production on the entire AAF order of 15 had been started even before the first flew. Here are numbers two, three and four under construction at Northrop Field, Hawthorne, Calif.

analyzers also were installed in the planes.

Particular importance attended the operation of a television scanner trained upon a selected group of flight panel instruments in each plane, that was watched and photographed from the receiving television screen aboard each drone's mother plane.

► **Measure Radioactivity**—The television readings covered the air speed indicator, manifold pressure gauges of outboard engines, altimeters, flux gate compass, and "G" meter.

No less important were recording scanners of each drone's fourteen telemeter radio channels to check momentary or prolonged effect of peak radioactivity upon the basic electric systems of the drones as well as radio installations.

Ryan Adds Employees; To Reach 2,000 by Fall

Ryan Aeronautical Co. will add new employees at the rate of about 100 a month for the next five months, bringing its total employment to about 2,000 by Fall, president T. Claude Ryan has announced.

In a reversal of general experience among most aircraft manufacturers, Ryan reports that it has been adding engineering personnel, increasing this category by one-third in the past six months. Twenty-five were added in a two-week period. The over-all situation regarding engineers is extremely critical (AVIATION NEWS, July 8, 1946).

Ryan states that the employment increase is necessary to fulfill commitments on military and naval developmental contracts, and because of the swelling business in

Ryan's division manufacturing exhaust manifold systems. One of the experimental projects on which the company is working is an advanced model of the Navy's Fireball fighter which has both jet and conventional engines.

Martin Has Order Backlog For 259 Twin-Engine Planes

The Glenn L. Martin Co. now has on its books orders for a total of 259 twin-engined 202 and 303 transports from eight domestic airlines and two foreign carriers.

The line-up early in July of Martin orders was: Commander Air Lines, six 202's; Northwest, ten 202's, forty 303's; Chicago and Southern, seventeen 202's; Braniff Airways, thirty 202's; Eastern, fifty 202's; PCA, fifty 202's; United, thirty-five 303's; Panagra, seven 303's. Servicos Aereos Cruzeiro do Sul, of Brazil, has ordered ten 202's, and the Doderro airlines of Argentina, four.

Fairchild Corp. V-Loan Is Reduced to \$5,000,000

Effective today, Fairchild Engine and Airplane Corp. voluntarily reduces its V-loan credit with banks from \$10,000,000 to \$5,000,000. This is the third reduction since the line of credit was arranged at \$25,000,000 in Nov., 1944.

Webb Wilson, Fairchild treasurer, points out that the company has not used the credit since Sept., 1945. Although it is not anticipated that although no need of the remaining \$5,000,000 is envisioned now, it is being retained as a guard against possible future financial requirements.



AUTOMATIC RELEASE:

Developed for emergency use at extremely high altitudes, this parachute permits its wearer a free fall to a more oxygen-laden atmosphere, then opens automatically. Release is controlled by barometric pressure which affects an aneroid that discharges a cartridge, pulling the release.

AVIATION NEWS • July 15, 1946

PRODUCTION—21

FINANCIAL

Airline Stocks Continue to Sell At Up to Seven Times Book Values

Prices are down 25 to 35 per cent from best prices earlier this year; deficits reported in first quarter had sobering effect.

Airline equities continue to sell at material premiums to book values. However, market prices are closer to actual asset values currently than they were some six months ago. At the present time, market prices range from 1.9 to 7.5 times indicated book valuations. Early this year, the ratios for these same carriers ranged from 2½ to 14.

Placing market prices in relation to equity positions has been one of the most reliable investment guides.

Late last year and continuing into the early months of 1946, airline stock prices were unusually strong and figured prominently as the market leaders. The future prospects of the industry were being discounted in a very optimistic manner. Much of this enthusiasm was subsequently corrected.

► **Airline Prices Down**—Currently, most airline prices are down about 25 to 35 percent from their best prices attained early this year. The substantial deficits reported by virtually all of the carriers during the current first quarter was a sobering factor. It is becoming generally accepted in investment circles, that the future of air transportation, while having tremendous growth potentialities, is beset by many obstacles.

Recent market adjustments appear to have resulted in a far more realistic appraisal of current earnings and near term prospects of the airlines. Whether further downward adjustments will occur remains to be seen. The accompanying table presents the relative positions.

United Air Lines has the most conservative market to book value ratio, 1.9. This is probably due to the company's disappointing relative 1945 earnings performance. There is little inclination to discount the future in any speculative terms. United has the highest book valuation of all the carriers. Some dilution has set in by the conversion

of the preferred stock earlier this year and the issuance of management stock.

► **Speculative Interest**—American's common stock has the largest market valuation among the carriers. American has always enjoyed considerable speculative interest and its broad expansion plans have attracted many market followers, thus accounting for the 3.8 ratio. The recent five-for-one stock split helped invite public participation.

American's total equity is increased considerably by inclusion of its \$40 million preferred stock issue sold a few weeks ago. It is interesting to note that about six months ago the common stock market values of United and American were the same.

There is a spread of about 34 percent in American's favor. A substantial dilution of American's present common may occur. To the extent that the existing 400,000 shares of preferred stock may be converted into about 1,900,000 shares of common, no detriment will be suf-

fered by the latter class with the price now around \$16 per share.

► **National Has Highest Ratio**—National Airlines, selling at 7.5 times its book value, has the highest ratio of the group. Evidently, the company's growth prospects are considered to be very promising, based on its New York route and recently awarded run to Havana.

Colonial Airlines, which for some time maintained the highest market to book value ratio, is down to 4.8. This compares with a ratio, rarely below 10 and closer to 15 in recent times. This change was a natural development due to the sale of 90,756 shares of additional stock, or one-third of its then outstanding issue, at \$20 per share early this year.

Prior to this sale, the book value was slightly better than \$3 per share. The bolstering of the overall equity position is obvious. Due to limited marketability, the stock previously experienced sharp upward fluctuations. With more stock available, thin markets in this issue are no longer common.

► **Mid-Continent Lowest**—Mid-Continent has the lowest absolute book valuation, approximately \$1,350,000 as of June 30, 1946. Chicago & Southern and Continental, however, are about tied for the lowest market valuation of the group.

In viewing all of these relationships, cognizance must be taken of the leverage provided by the funded debt subordinating the equity issues in various capital structures. Prominent in this respect are \$40 million each for American and TWA and \$10 million for PCA.

AIRLINE MARKET PRICES AND BOOK VALUES

Company	Common Shares Outstanding	Approximate Market Price	Total Market Value	Estimated Book Value Per Common Share June 30, '46	Ratio Market to Book Value
American.....	6,702,836*	\$16	\$107,245	\$28,500	3.8
Braniff.....	1,000,000	26	26,000	7,250	3.6
Chicago & Southern.....	271,906	20	5,438	1,800	3.0
Colonial.....	364,956	30	10,949	2,300	4.8
Continental.....	271,756	20	5,435	1,500	3.6
Delta.....	400,000	44	17,600	4,200	4.2
Eastern.....	2,391,608	26	62,182	21,000	3.0
Mid-Continent.....	389,399	17	6,600	1,350	4.9
National.....	500,000	30	15,000	2,000	7.5
Northeast.....	500,000	17	8,500	1,600	5.3
Northwest.....	539,070	42	22,641	9,750	2.3
PCA.....	477,006	40	19,080	4,500	4.2
TWA.....	975,586	50	48,779	17,250	2.8
United.....	1,887,238	38	71,715	37,750	1.9
Western.....	520,810	24	12,499	5,500	2.3

*Including C. R. Smith's option on 250,000 shares at \$11.70 per share. No provision is made for potential conversion of 400,000 shares of preferred at \$21 per share into a total of 1,904,761 shares of additional common.

PRIVATE FLYING

★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★

New Variable Pitch Propellers Added to Many Lightplanes

Post-war models will feature more efficient props, as optional equipment due to cost; many manufacturers in field.

By ALEXANDER MCSURELY

Controllable, automatic, two-position, or ground adjustable propellers may be expected to equip most personal aircraft except those in the miniature price bracket, within the next year or two.

Advantages of changing propeller pitch, from the flat blade used at takeoff, to a blade angle which takes a bigger bite of air when the plane attains its cruising altitude and settles down to level flight have long been appreciated by aircraft engineers.

But the fact that a fixed pitch propeller can be made and sold for about one-fifth the cost of a variable-pitch prop has been a strong deterrent factor in a market so seriously price-competitive as the lightplane field. The extra weight in the mechanism required to change pitch is another factor to be considered. But this is a relatively minor factor since the performance and fuel economy advantages of pitch change usually more than offset the weight disadvantage.

► **Competitors Listed**—Principal current competitors in the personal plane field in production of variable pitch propellers are: Sensenich Brothers, Lititz, Pa., largest maker of fixed pitch props; Aeromatic Propeller division, Koppers Co., Baltimore; Continental Motors, Muskegon, Mich.; Beech Aircraft Corp., Wichita; Hartzell Propellers Co., Piqua, Ohio; Wickwire Spencer Aviation Corp., New York; and Thomson Industries, Long Island City, N. Y.

Principal manufacturers of propellers for larger horsepower engines which may be expected to compete in the smaller variable-pitch propeller field if it becomes sufficiently attractive include: Curtiss-Wright, Caldwell, N. J.; Hamilton Standard, East Hartford, Conn.; Aeroproducts, Dayton, Ohio; and American Propeller Corp., Toledo, Ohio.

Other propeller companies, most of them making only fixed pitch propellers, but some of which may be developing variable pitch models include: Freedman-Burnham Engineering Corp., Cincinnati; Flottorp Mfg. Co., Grand Rapids, Mich.; McCauley Corp., Dayton, Ohio; Fahlin Mfg. Co., Columbia, Mo.; Stone Propeller Co., Wichita, Kan.; U. S. Propellers, Inc., Pasadena, Calif.; Gardner Propeller Co., Westfield, Wis.

► **Orders Analyzed**—Analysis of the current status of propeller orders by leading lightplane manufacturers indicates that with few exceptions the manufacturers are specifying fixed pitch propellers as standard equipment on their models. However many of the manufacturers of planes above the minimum 65 hp. range of power, have contracted with one or more of the propeller companies to supply the variable pitch propellers to them for factory installation at the option of purchaser at a higher price.

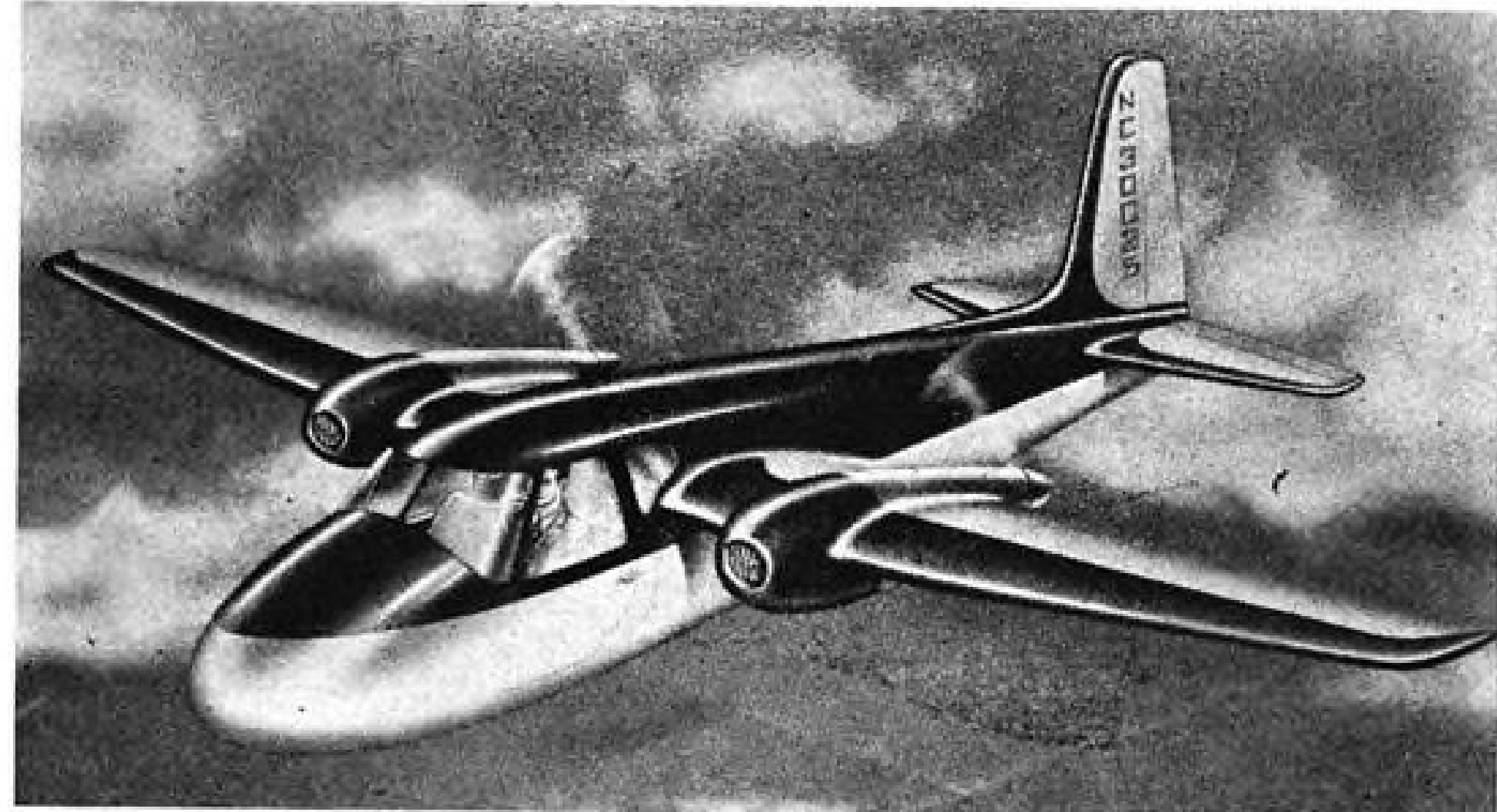
There is a strong possibility that the improved performance of the variable pitch propeller-equipped planes may be such a strong selling point that a large percentage of the customers will elect to take this equipment, at the increased cost. Assuming that this will enable the propeller manufacturers to go into quantity production of the variable pitch models, it seems quite likely that the production costs of these may be brought down to nearer that of the fixed pitch fans. Then the ultimate result may be that one or more manufacturers may specify the variable pitch props as standard, and others will follow.

► **Not Standard Equipment**—Until such a mass swing begins, a realistic study indicates that very few planes will provide standard-equipment variable propellers.

Republic has indicated it will supply a ground adjustable Aeromaster propeller, produced by Aeromatic division, Koppers Co., as standard equipment on the four-place Seabee amphibian. A Hartzell propeller with reversible pitch, an important advantage in steering, for any seaplane, is offered as an optional extra.

It is likely that the new four-place Beech Model 35, now being test flown, will probably use a variable pitch propeller manufactured by the parent company, as standard equipment. The new two-position hydraulic Sensenich propeller is expected to go on the Culver Model V as standard.

Aeromatic reports that production installations, presumably at



BAUMANN BRIGADIER:

An artist's conception of the newly designed Baumann Brigadier 250, twin-engine pusher personal plane (AVIATION NEWS, July 8). Powered with two 125 hp. engines, the four-to-five placer is made by Baumann Aircraft Corp., Roscoe, Calif. Plane is expected to sell for less than \$10,000 and prototype is due to fly in November.

customer's option at increased prices in most cases, are being made at the factory, of Aeromatic propellers on two-place Globe Swifts of 85 and 125 hp.; Bellanca four-place Cruisairs, and North American Navions, and two-three-place Johnson Rockets. Prototypes of a number of other "new blue ribbon" personal planes, according to Sid Fedan, Aeromatic division manager, are now investigating performance of the Aeromatic propellers.

► **\$1,000,000 Orders**—The Baltimore manufacturer currently reports that its 1946 orders for three models have exceeded \$1,000,000. Two models now in quantity production are the F-200, for flange shaft engines of 65 to 150 hp., and Model 220 for No. 20 spline engines of 150-300 hp. After adjustment at installation, the Aeromatic is designed to be fully automatic, changing pitch to meet conditions of flight without control or attention from the pilot, through a system of counterweights.

Little information has yet been released on the new Sensenich two-position propeller, expected to sell for around \$250. However it is known that one of the first ones has already had considerable flight experience on the Piper XL-14 125 hp. liaison plane, built for the army but never manufactured in quantity due to the cessation of the war. The propeller is controlled hydraulically from the cockpit by the pilot.

A ground adjustable model with plastic base blades manufactured by Hartzell Propeller Co., Piqua, is being offered at a retail price of \$105 in a recent Firestone Aircraft Accessories Catalog, subject to local dealers' conditions.

More detailed descriptions on other variable pitch propellers made by Beech, Continental, Wickwire-Spencer, and Thomson Industries, have already been carried in previous issues of AVIATION NEWS.

New Lightplane Field

An airport being constructed primarily for the servicing of private planes will be opened within a few weeks about six miles west of Harrisburg, Pa., opposite the Mechanicsburg Naval Supply Depot. The field will be owned and operated by Richard W. Weibley.

Two runways, 2500 and 1800 feet, are now being graded. The field will be equipped with hangars and shops and will have a building for offices, a snack bar, lobby and observation terrace.



All-Metal Luscombe: The Luscombe two-place Silvaire now boasts an all-metal wing, of skin-stressed construction, using two metal spars and two ribs internally. Already in production, the new wing achieves a five-to-eight mile-an-hour increase in speed over the previous fabric-covered wing used. Luscombe is also using a single non-welded strut brace between wing and fuselage with the new wing, in place of the conventional double strut brace used on the old Luscombe wing, and on most other two-place high-wing lightplanes. The all-metal wing makes it possible for the Silvaire to claim a unique standing as the only completely all-metal lightplane in quantity production.

New All-Metal Wing Made for Luscombe

A new all-metal wing of stressed-skin simplified design, replaces the fabric-covered wing previously used on the Luscombe Silvaire, and is now in production at the Luscombe Aircraft Corp. plant at Dallas.

The wing is built around two metal spars, and uses only two ribs for each wing. The remainder of the load is carried by the metal skin itself. The simplified construction has eliminated much internal construction, so that the gross weight of the new metal wing is almost identical with that of the fabric-covered wing it replaces.

The new wing uses a single non-welded sturdy strut, between wing and fuselage, instead of the double V-strut previously used. The single strut provides easier access to the cabin, and improved visibility both for pilot and passenger, in the side-by-side two-place Silvaire.

Besides advantages of maintenance and production efficiency, the new wing improves the plane aerodynamically, and results in an increase in speed estimated at five-to-eight miles an hour, over the same fuselage with the fabric-covered wing.

Luscombe has been a pioneer in metal aircraft construction in the lightplane field, having produced planes with all-metal components except wings, for approximately 12 years. The addition of the all-metal wing to the Silvaire, according to Leopold H. P. Klotz, Luscombe president, makes the Silvaire the only completely all-metal lightplane in mass production in the world today. The planes are now being produced at a rate of 12 a day.

Lack of Engines Forces Cut In Taylorcraft Production

Taylorcraft Aviation Corp., Alliance, Ohio, last week announced a cutback of production to 92 planes a week, due to inability of engine manufacturers and sub-contractors to supply a sufficient quantity of powerplants to match production of completed airframes, Nash Russ, president said.

Russ said duration of the cutback, affecting 1800 workers, would depend on engine shipments. The cutback came only a few days he said after the company had attained a production of 50 airplanes a day, believed to be the highest rate yet attained by any personal aircraft manufacturer.

Stinson Orders 2,000 Franklin '335' Engines

Stinson division of Consolidated-Vultee Aircraft Corp., has placed an order for 2,000 more of the 150 hp. Franklin "335" six-cylinder horizontal-opposed air-cooled engines used in the four-place Stinson Voyager 150. The order was in addition to Stinson's initial order of 1,000 of the engines.

The Model 335, first Franklin post-war model to go into quantity production, is a development from a basic military engine used during the war on radio-controlled Culver target planes.

Among its features are: new all-aluminum cylinders, steel timing gears, nitrided heavy-duty crankshaft, external oil-pressure relief valve, and specially designed carburetor with built-in altitude control, accelerator pump and idle cutoff, features usually found only on much larger engines.

In announcing the additional Stinson order, C. F. B. Roth, president of Air-Cooled Motors, Inc., Syracuse, N. Y., pointed out that many favorable reports have already been received from Voyager 150 owners about the smoothness, quietness, economical operation, and performance of the engine.

Downtown Airpark Work Begun at Oklahoma City

Construction has started on a \$250,000 downtown airpark for Oklahoma City, which is expected to be ready for flying use about Aug. 10. The airpark, only a short distance from the heart of the Okla-

homa City business district, will have a 2,400 ft. North-South runway, and a 2,250 ft. Northwest-Southeast runway, both with 300 ft. width.

Homer H. Dunlap, Jr., head of a group of Oklahoma City business men interested in the project, says the completed airpark will provide hangar space for 200 planes, an administration building, sales service and also overhaul facilities. It is planned primarily for the use of business-men flyers who use their planes in their business.

CAA Warns U.S. Pilots On Canadian Rules

United States pilots planning to fly across Canada to Alaska, via the Northwest Staging route, are advised by the CAA to learn and follow Canadian regulations during their flight over Canada. Full information and proper forms and regulations may be obtained by writing Northwest Air Command, Edmonton, Alberta, or Department of National Defense, Ottawa.

Unwitting violation of Canadian regulations have already caused several searches by RCAF planes in which the search planes have been lost. W. P. Plett, CAA Regional Administrator for Alaska, stated recently.

Regulations provide among other things that planes must carry a 45 minutes reserve gas supply in addition to actual route requirements, must carry five pounds of emergency rations per person, in waterproof containers, must be equipped with two-way radio, and carry emergency equipment such as cooking uten-

sils, a compass, matches, fishing equipment, sleeping bags, snow shoes, and either mosquito netting or tent to protect passengers and crew.

Landing and accommodation fees must be pre-paid, and transient pilots must file a flightplan on Canadian Form F48.

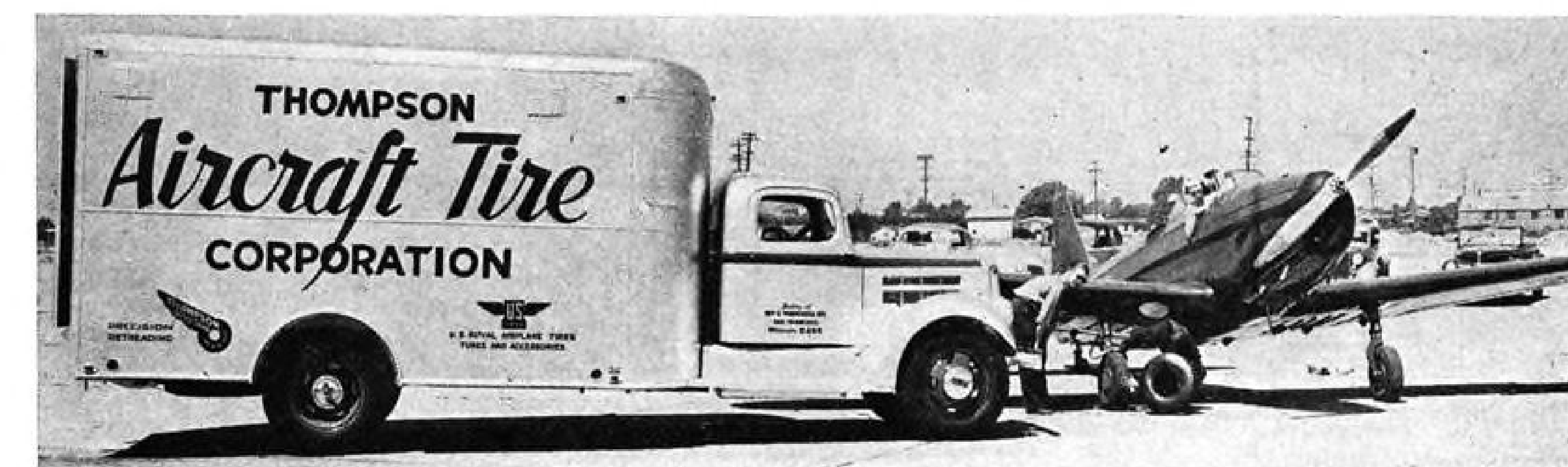
Hallicrafters to Supply Bell 'Copter Radios

Contract to supply all radio requirements for the new Bell two-place helicopter, Model 47-B, has been awarded to National Aeronautical Corp., Philadelphia, national distributor for Hallicrafter Skyfone radios, James Riddle, president, announced last week.

The Bell helicopter will use Skyfone Model CA-2 deluxe transmitter-receiver set, in what is believed to be the first application of private plane radio to helicopter use. The installation required in adapting the set to the helicopter, involved problems of rotor blade modulation and engine ignition noise, since the radio antenna is necessarily close to both rotor and engine.

Hallicrafters now has orders for 15,000 Skyfones including recently signed contracts to supply the equipment for the Stinson Voyager 150 and the Culver Model V two-place plane, in addition to previously announced contracts for standard equipment two-way installations in the Republic Seabee and the Piper Super-Cruiser.

Distributors now signed to handle Hallicrafter Skyfones include: Snyder Aircraft Corp., Chi-



THOMPSON RECAP SERVICE:

Recapping service to private plane owners in California is being provided by Thompson Aircraft Tire Co., which has name of firm painted on top of truck so that pilots aloft can land to get tires retreaded. Truck is stocked with casing retreads and will take

trade-ins or return casings after retread. Currently truck calls on airports once a week. Later three trucks will be used to cover territory. Plans are for truck to carry complete line of small aircraft accessories in addition to tires.



AERIAL PATROL:

Loren Carlberg, Enid, Okla. veteran pilot and instructor (right), and his son Bob, have completed their first year of patrol flying at 50 to 400 ft. altitudes above electric power lines and oil pipe lines in Texas, Oklahoma, Missouri, Indiana and Illinois. They are shown with an Aeronca Champion which they use in the patrol, flying it at about 75 mph. along the lines, and covering about 6,000 miles of powerline and pipeline patrol each month. They estimate having saved thousands of dollars in quickly spotting breaks in the lines.

cago; Van Dusen Aircraft Supplies, Minneapolis and other branches; Flight, Inc., Cleveland; Western Skyways Service, Portland, Ore.; Buffalo Aeronautical Corp., Buffalo, and all Piper airplane distributors.

Fly-Away-Factory Service Offered by Former ATC Men

Lifting from the automotive industry's still-ample bag of tricks, two Detroit men have established a fly-away-factory delivery service for lightplane manufacturers. It is similar to the drive-away businesses serving Detroit auto plants. Seymour Karp and A. Alan Montrose, originators of the new service, have recruited former Air Transport Command pilots for the ferrying work. The pilots have an average of 10 years' flying experience. At present, the firm is handling 150 planes a month.

Ferrying rates are between 10 and 15 cents, with an average of 12½ cents per airline mile on all

Briefing For Private Flying

CAP CHARTERED—President Truman's recent action signing a bill unanimously passed by both Houses of Congress to grant a federal charter to Civil Air Patrol, completes authorization for the first such charter approved in 13 years. It gives CAP institutional status similar to the Red Cross, Boy Scouts, American Legion, and Veterans of Foreign Wars. The recognition was ascribed to CAP's wartime service in coastal and border patrols, target towing, missing aircraft search and other missions in which more than 50 CAP airmen were lost. Under leadership of Col. Earle L. Johnson who continues as national commander, CAP is expected to continue serving in civilian emergencies where aircraft are useful, and to emphasize its cadet program closely tied in with the AAF's air reserve. A major air show in each state this year, with AAF participation is planned to raise funds for CAP operations, curtailed sharply since AAF support had to be withdrawn last March.

170 IN ERCO FLYING CLUB—Employees at Engineering & Research Corp., Riverdale, Md., have a flying club with more than 170 members to fly the five two-place Ercoups which the company has provided for club use. In June, the employees flew 571½ hrs. or 114 1/3 hrs./plane.

FOREIGN GLIDER SHIPMENTS—Schweizer Aircraft Corp., Elmira, has started foreign shipments of gliders and sailplanes, by sending a two-place SGU 2-22 sailplane to Buenos Aires, Argentina, and a single-place SGU-1-19 glider to East London, Union of South Africa. The sailplane will be demonstrated before the Aeroclub Albatros, and officers of the Argentine air force, while the African glider is consigned to Haller Aviation which expects to form glider clubs in the Union and in Northern Rhodesia also. The two models are designed with very similar flight characteristics to permit easy transition from one to the other. The company has received a large number of inquiries from foreign countries where the gliding and soaring movement is subsidized by national governments. The Norwegian Aero Club recently bought 20 Schweizer army gliders from surplus. Sweden, France, Holland, Belgium, Denmark and Australia are other areas which have indicated interest in the Schweizer motorless aircraft.

HARA-KIRI AFTER 60 MISSIONS?—A bulletin prepared by the Civil Aeronautics Board safety bureau for distribution to former military pilots, asks a pertinent question in its title: "Why Commit Hara-Kiri after 60 Safe Wartime Missions?" Sold at 5 cents a copy by the Government Printing Office, Washington 5, D. C., the pamphlet might be distributed with advantage by the nation's aircraft operators to the "hot pilots" in their localities. Amusing is the slightly irreverent explanation of the need for transition training in stepping down from a high-powered military plane to a 65 hp. lightplane. "How many admirals, accustomed to command battleships, would drown if they got into an Eskimo's kayak?" the pamphlet asks.

SALESMANSHIP HOTBED—The territory of metropolitan New York may not be as well suited for use of present-day personal aircraft as more rural areas, but it is going to be subjected within the next few months to some of the hottest sales competition in the field. Latest lightplane expert to announce his establishment in New York, is J. C. (Jim) Welsh, former Stinson sales director, who now heads Personal Airplane Sales Corp., New York Cessna distributor, with offices at 147 West 42nd St. Welsh will be in competition, among others, with such salesmen as Spencer (Spinney) Leach, veteran Stinson distributor, and Al Bennett, former Aeronca sales director, now setting up his New York Aeronca distributorship, the department store setups of Ercoupe, Piper, and Taylorcraft, and the fact that Republic Aviation Corp., will doubtless concentrate heavily on building sales in its hometown territory, if the recent New York air show is any indication. —Alexander McSurely

popular types of civilian planes. This includes complete insurance protection, a bonded pilot and fuel. Although based in Detroit, the company serves all manufacturers. Re-

turn passage expense is reduced, because a pilot on a run can pick up another new plane for delivery at the factory nearest his original delivery point.

TRANSPORT

Steamship Lines Face Possible Loss of Half Luxury Travel to Air

International airlines boosting traffic while surface carriers wait for reconverted liners; biggest air gains seen on Hawaii run.

By MERLIN MICKEL

Optimistic wartime predictions of high airline penetration into trans-ocean passenger business are being borne out by recent sea-air developments of disadvantage to surface carriers. On a few routes, indications are that planes will carry almost all first-class traffic heretofore serviced by ocean liners.

Even before the war, overseas air carriers were invading many steamship passenger runs to a far greater degree than domestic airlines were tapping Pullman traffic. In 1941, the ratio of domestic air to Pullman travel was less than 14 percent. At the same time, the airlines' share in total Caribbean and Latin-American passenger traffic was about 27 percent.

Airlines Get 50 Percent—The ratio of plane to Pullman traffic now has climbed to around 20 percent domestically, but in overseas transportation the airlines, by steamship companies' own estimates, stand to garner half of all first class passenger business in the next few years. Several steamship firms have told CAB that they may be "bled to death" by passenger diversion to the airlines unless they are permitted to operate coordinated sea-air services.

In certain cases, their prophecies may be fulfilled despite contentions by some airline officials that plane competition would generate so much new traffic that surface carriers would actually gain business.

U. S. ship lines are now in an especially vulnerable position. Their large passenger vessels, without exception, were pressed into troop-carrying duties during the war, and most of these ships will require many more months to be reconverted for commercial use.

Fares Are Lower—There are signs that steamship passenger fares on both U. S. and foreign lines will be equal to or above pre-war rates. Overseas plane fares, by contrast, will be well under 1941 levels.

The Sea-Air Committee of the National Federation of American Shipping asserts that CAB's Hawaiian decision (AVIATION NEWS, July 7) denying a certificate to Matson Navigation Co. "further tightens a vise which is crushing the American Merchant Marine." The shipping group said the Board has extended to the Pacific the "huge monopoly of overseas aviation that the tightly knit clique of domestic airlines now enjoys."

Steamship officials currently are divided into two camps regarding the possibility of obtaining favorable consideration of the sea-air case from CAB in the future. One group feels that the Board, with a new chairman (James M. Landis) and a recently-appointed member (Clarence M. Young), may yet revise its stand against surface carrier participation in air transportation.

Favor New Law—There is also considerable sentiment for abandoning completely efforts to have the Board review its established policy. This faction believes the Sea-Air

Shippers Back Bill

Reports that some major steamship lines will support Senator McCarran's All American Flag Line bill (AVIATION NEWS, June 24) have been denied by the Sea-Air committee of the National Federation of American Shipping. A committee spokesman said nothing had occurred to indicate that such a move is under consideration or will be considered.

The News is informed by sources it considers fully reliable, however, that two steamship companies have decided definitely to get behind the community company legislation, and a third probably will join them. Public announcement of this support is not expected until the bill again is up for public hearing.

Committee should go all-out to obtain from Congress a "corrective mandate through legislation." It is thought that coordination of this campaign with pressure now being exerted by non-scheduled carriers against CAB policies might be extremely effective in molding public opinion and stirring Congressional action.

The West Coast to Hawaii route, which United Air Lines will soon fly in competition with Pan American Airways, is an excellent example of potential airline penetration into steamship passenger business. In 1941, approximately 62,500 passengers traveled between the Mainland and Hawaii. Of these 963, or less than 2 percent, flew.

Surveys taken by Matson show that around 100,000 passengers will travel between the West Coast and Hawaii in the first normal post-war year, and that 57 percent will go by plane. Matson, which was instrumental in developing traffic to the Islands, had all its passenger vessels adapted to war service. To date, only one has been reconverted for passenger operations, and the company's full fleet of liners will not be available before next spring.

United Plans DC-6's—United intends to inaugurate flights between San Francisco and Honolulu as soon as DC-4's (later DC-6's) and personnel can be assigned to the run. Announcement probably will come soon that it has ordered Boeing *Stratocruisers* for the operation. President W. A. Patterson states that UAL's fares probably will be equal to or less than cabin steamship rates. Pan American, which now operates daily *Constellation* service to Honolulu, cut its one-way tariff from a pre-war \$278 to \$195 in March. UAL proposed \$125 one way in its application for the route.

In the Atlantic, the airlines have a tremendous head start on post-war business. Only a few liners will be in operation by fall, and surface fares promise to rise considerably over pre-war rates.

Cunard White Star Line—Officials said recently that when the Queen Elizabeth begins peacetime service this fall the minimum first-class passage between New York and Southampton will be around \$360, "perhaps more." This compares with a pre-war fare of \$287.

In contrast, present New York-London airline fare is \$375, with prospects of a reduction to \$325 under the schedule proposed at IATA's North Atlantic Traffic Conference last month. Besides undercutting the first-class fares on the

larger liners, the airlines offer service directly to London and Paris, while the surface carriers dock at Southampton and Cherbourg, necessitating additional expense and surface time above the 4½ to 5 days consumed at sea.

Helicopter Mail Runs Begin at Los Angeles

Army crews fly two routes for Post Office in 30-day test to obtain operational data.

Tests of suburban-metropolitan helicopter mail service being conducted in the Los Angeles area through the cooperative efforts of the Army and Post Office Department were in full swing last week after preliminary survey flights.

Instigated by the Department, the 30-day trials were being run to determine the practicability of similar operations in all large metropolitan areas throughout the Nation.

Data obtained on operation and maintenance costs, equipment and personnel requirements, mail volume and time reduction effected by the new type of service will be submitted to CAB by the Department in the course of hearings on helicopter applications. The tests also will determine practical routes, suitable landing areas, and workable time schedules for the Los Angeles area, for which the Board will hold helicopter hearings Sept. 9. The date is a postponement to permit submission of data obtained in the tests.

The experiments mark the third time in the Nation's history the

Army has carried mail by air. On May 15, 1918, the Post Office Department and Army Air Service started an experimental line between Washington and New York. It lasted three months. Again on Feb. 20, 1934, when mail contracts were withdrawn from the commercial airlines, the Army carried the mail.

► **Project "Mail"** — Now the AAF again is assisting the Postal service—this time in an experiment known as "Project Mail." Six helicopters and their crews, working through the 62-11 Detachment, 62nd AAF Base Unit, March Field, Calif., on July 8 started preliminary flights over two circle suburban routes in the Greater Los Angeles area.

The Los Angeles area was chosen for the initial experiment because of its air-minded population, the distribution of its outlying communities, and its varying terrain and weather conditions. Post Office representatives first selected 34 landing and takeoff sites in the outlying districts, but after consultation with the pilots flying the two routes—one inland and one on the coast—34 new sites were selected for the helicopter stops.

► **Data Sought**—At the end of the 30-day test period, the Army-Post Office team hopes to have the answers to the proper method of mail handling, schedule failures because of weather, pilot fatigue and the cost of maintenance. It was indicated that three trained helicopter mechanics and three helpers would be needed to keep the five test planes up to a 1,200-hr. per year utilization.



BUSES AUGMENT AIRPORT SERVICE:

Symbol of a trend is this airport bus, which with others like it is used at Chicago Municipal Airport to augment airport limousine service. Accommodating 23 passengers and 69 pieces of average size luggage, the bus shuttles between the port and one downtown destination. The "Airporter" is built by Flexible Co. of Loudonville, Ohio.

Pertinent information obtained will be compiled for CAB for its guidance in passing on future route applications. The Post Office will participate in their review.

The Army hoped to be able to keep up schedules which were set-up allowing one-minute stops at pickup points. The helicopters are flying two flights per day on each of two routes (AVIATION NEWS, June 24). Time for the inland route, with 19 stops, is 1 hr. 52 min.; for the coastal route, with 14 stops, 1 hr. 27 min.

Three R-5D's were made available for the experiment in addition to March Field's three R-5A's, the former a four-place plane and the latter a two-place craft.

Air Lines Board Rules On TWA Pilot Case

Presidential group recommends wage increases below ALPA demands; recognizes airline wage committee.

By BLAINE STUBBLEFIELD

The Air Lines Emergency Board, appointed by the President to forestall a TWA pilots' strike and to recommend terms of settlement in the dispute over flying pay on four-engine planes, gave the pilots less than a tie score in its findings.

These (1) recognized the airline wage negotiating committee; (2) found equitable the present formula for computing pilot pay; (3) recommended pay increases considerably below pilots' demands; and (4) declined to limit flying hours and guarantee minimum hours.

Presentation of the recommendation at the White House July 8 began a 30-day period to Aug. 8 during which parties agree to remain in status quo. In effect, management agrees not to lock out and the pilots agree not to strike.

► **Committee to Meet**—The Airlines Negotiating Committee immediately called meetings in New York to analyze the Board's proposed terms and determine the cost of acceding.

Committee spokesmen gave personal opinions that agreement could be reached with the Air Line Pilots Association on the basis of the Board's recommendations.

They said the question of settlement rests chiefly with David L. Behncke, ALPA president, some of whose major demands were rejected or modified by the Board.

The report, said a spokesman for the Railway Mediation Board, is mainly a basis for further negotia-

tions between the parties. If they fail to agree, ALPA can issue another strike call after Aug. 8.

The Board consisted of Justice George E. Bushnell of Michigan Supreme Court, Dr. William M. Leiserson of Washington, and Dr. John A. Lapp of Chicago.

► **Board Straddles Issue**—Major difference preventing settlement months ago was the airlines insistence on dealing through their wage negotiation committee. ALPA refused to recognize the Committee, and insisted on negotiating with one company at a time. The Board straddled this issue by recognizing the committee as agent of the 13 airlines involved in the 4-engine program, but consenting to single-company negotiations.

It referred American Airlines' case back to the parties for settlement on basis of its TWA recommendations or for further mediation. All the others: American Overseas, Braniff, Chicago & Southern, Delta, Eastern, National, Northeast, Northwest, PCA, United, and Western, were referred back to the parties with suggestion that they be settled on the basis of recommendations in the TWA case.

► **Pay Formula Equitable**—ALPA convinced the Board that all but the TWA case were in various stages of negotiation and could not properly be considered emergencies for disposition by the President's emergency board.

The Board found that the present pay formula is equitable but should be extended to cover speeds above 200 mph. Hourly pay brackets should be extended by 20 cent increments for each additional 25 miles flown per hour above the present top bracket of 200 miles or



RADIO DIRECTION:

Willet trucks handling ground transport of United Air Lines air freight at Chicago (AVIATION NEWS, July 8) have two-way radiophones, shown here in use by a driver, for instructions on pickups and deliveries.



PCA Tries Milk Run: Sampling the subject of a recent experimental flight by PCA are President C. Bedell Monroe (right), R. W. Brodesser, president of Southern Dairies, and Jean Wentworth, PCA hostess. The flight went from Milwaukee to Knoxville and Birmingham via Washington, where the picture was taken. (PCA photo.)

more per hour. Mileage rate for monthly mileages of 12,000 or more at more than 100 mph. should be increased from 1 cent to 1½ cents.

Base pay for all classes of first pilots on international runs should be increased \$750 per year, with hourly and mileage pay the same as on domestic routes, the Board said. Co-pilots in domestic service should get an added ½ cent per mile for monthly mileage of 12,000 or more at speeds over 100 mph., and on international runs a composite rate of \$1 per hour should be paid them for day and night time, plus 1 cent per mile for 12,000 miles or more at 100 mph., plus \$25 per month to qualifying navigators.

The Board denied pilots request for limitations on monthly and yearly flying hours and mileage, as well as guarantees of minimum monthly flying hours. It recommended various rules on compensation, and on flying and living conditions.

UAL Boosts Order

United Air Lines has increased its order for Martin 303's to 50. Thirty-five were ordered from the Glenn L. Martin Co. last January with option to purchase 35 more. United expects cost of the fleet of 50 to approximate \$12,857,000.

PCA Experimental Flight Tests Air Milk Deliveries

Aware of southern markets for north central dairy products, PCA has conducted an experiment in the air transport of fresh milk from Milwaukee to Knoxville and Birmingham. Forty gallons from a Milwaukee dairy were aboard the airplane.

C. Bedell Monroe, PCA president, conceded that high costs now bar mass milk deliveries by air, but guessed that by 1950 it may be possible to carry fresh milk to Florida and return with fresh orange juice. He expects PCA engineers to design a tank plane for perishable liquids.

No special preparations were made for the experimental flight. The milk was cooled to about 35 degrees at Milwaukee.

CAB Men to Alaska

Civil Aeronautics Board sent two men to Alaska last week for a two-weeks' inspection of air transport in the Territory. Russell B. Adams, director of the Board's Economic Bureau, was accompanied by Perry R. Baker, accountant and auditor in the Bureau. They flew to Anchorage to talk with Raymond W. Stough, chief of CAB's Alaskan office, before their airline tour.

New Baltimore Airport Program Lags in Purchase of Land Tracts

Old field approved for alternate use by *Constellations*; Doolittle resigns as N. Y. Airport Authority member because of Shell job; Boston ready for overseas traffic.

Alternate use of Baltimore Municipal Airport by four-engine Lockheed *Constellations* has been approved by Civil Aeronautics Administration. Approval as an alternate for infrequent landings when other airports in the area cannot be used was asked by TWA.

Acquisition of land for Baltimore's new airport is slow. The master plan may be completed soon, but only about a dozen of 42 tracts required have been purchased. Voters have favored issuance of \$3,000,000 bonds for airport purposes, and may be asked to vote in the November election on the remainder of the \$6,000,000 bonds the city was authorized by the General Assembly to issue if the voters approve.

A new schedule of prices in aviation gasoline and oils at Baltimore Airport reflects a price reduction in a new city supply contract. Biggest effect will be on lots of over 200 gals. per delivery and 2,000 per month.

Other airport developments elsewhere:

► **New York**—The city and its new Airport Authority are renegotiating all airline and oil leases at Idlewild Airport and some at LaGuardia Field, with the hope that no litigation will ensue despite airline opposition to

changes in the leases involving the carriers, who also opposed creation of the Authority ("Aviation News," April 1). . . . James H. Doolittle resigned as Authority member because he is vice president and director of Shell Union Oil Corp., which has an Idlewild lease, and because he expects to spend some time in Europe in the future. Mayor O'Dwyer said he would appoint Frederick G. Reinicke, Commissioner of Marine and Aviation. The term expires in 1950. The three authority members serve without salary.

► **Syracuse, N. Y.**—Survey of Syracuse Municipal Airport, now a limited airport of entry, by Washington officials will determine whether it shall be given full status as an airport open to all planes from or to Canada.

► **Niagara Falls**—Empire Airlines has been invited to make the municipal field their western terminal headquarters.

► **Boston**—Boston Airport now is ready to handle overseas aircraft, city officials say, with runways 7,000, 6,000 and 4,000 ft. long. American and TWA have been using Bedford, Mass., airport outside Boston for their North Atlantic service, and Pan American delayed start of Boston service pending improvements in Boston field. All three expected to begin use of Boston Airport for overseas flights shortly.

► **Pennsylvania**—State Aeronautics Commission approved sites for projected airports at Nottingham (Atley C. Hansen and Carl N. Hansen); Beaver Meadows, Carbon County (Irwin W. Schugard, Hazleton); and seven miles southeast of New Castle airport, (Frank J. Farone, New Castle). A former emergency field near Philipsburg has been opened by Mahlon Wells of Philipsburg for transient traffic. Weather station and radio facilities have been installed.

► **Dayton, Ohio**—Purchase by the city of 172 acres adjoining Municipal Airport will permit runway extensions. Cost of two tracts involved is \$62,000.

► **Mansfield, Ohio**—Will dedicate a new \$2,000,000 class V municipal airport July 20 and 21. Site is 2½ miles north of the city limits. Runways: two paved, 5,600 ft. long with 1,000 ft. sod extensions at each end; two sodded, also 5,600 ft. long. Field covers 1,200 acres.

► **New Orleans**—The new Moisant International Airport is in pressing need of additional hangar facilities and parking aprons. City's Aviation Board has authorized purchase from War Assets of three surplus hangars, when and if available, two for Moisant and one on Calendar Airport. One has been obtained. Moisant's new instrument landing system is said to be the first of its kind at any civilian airport in the South. Commissioned by CAA, it is in operation. A VHF radio range is being installed.

► **Meridian, Miss.**—Temporary use of the National Guard hangar at Key Field has been granted the city.

► **Kansas**—Twenty-nine Kansas towns have approved bond issues totaling more than \$1,000,000 for airport construction next year, planning to match federal funds in construction programs. Kansas has 115 ports and port sites approved by CAA, plus numerous unapproved fields and landing strips. Wichita has 14 approved airports.

► **Kansas City, Mo.**—Chamber of Commerce recommends that airport planning and management be taken out of the hands of the public works department and a qualified director of aviation be appointed to head a new city department.

► **St. Louis**—A \$1,300,000 improvement program at Lambert-St. Louis Municipal Airport and a proposal for condemning about 100 acres for a municipal small-plane airport have been approved by the City Airport Commission. The Lambert project contemplates a new 5,000-ft. concrete runway starting at the west edge of the field, to cost \$1,265,000. Construction of a plane parking strip 450 ft. x 20 ft. projecting into the field with five circular parking stands on each side was approved. . . . The city is negotiating to make available to the airlines part of the old Curtiss-Wright Corp. plant at Lambert airport, only building there large enough to accommodate DC-4's.

► **Arkansas**—A new state aviation law providing for uniform airport service and maintenance will be submitted to the 1947 General Assembly. Gov. Ben Laney announced at Little Rock. Provisions will conform to the federal airport bill.

► **Little Rock**—CAA has established a district office at Little Rock to promote airport construction and improvement with the \$5,700,000 in federal airport funds recently earmarked for Arkansas, of which \$564,000 will be available this year.

► **San Antonio**—Air export-import traffic to Mexico through the Municipal Airport, port of entry under a temporary permit, jumped from 8,850 lbs. in May last year to 44,858 in the same month this year. Ratio of exports to imports was 10 to 1.

► **Houston**—Airlines serving Houston are working out cooperative agreements for airport and downtown facilities. Pan American, Chicago and Southern, and Braniff, authorized recently by CAB to serve Houston on flights to Latin America, have agreed on space allocations in a new \$40,000 temporary building near the airport terminal. Government, immigration, customs and quarantine officials also will have space.

► **Palacios, Texas**—Army air base at Palacios, used during the war by Camp Hulen, has been turned over to the city.

► **Oakland, Calif.**—Application for use of two hangars at Oakland Municipal Air-

Georgia Air Group

Georgia airport operators have organized the Georgia Aviation Trades Association. Millard S. Davis of Atlanta is president, Carson Chalk of Adel vice-president, and Ezra Howington of Atlanta secretary-treasurer. Twelve members were elected to the Board of directors, six representing aviation interests in North Georgia and six South Georgia.

port pending removal of Naval units to other bases has been denied temporarily. Navy plans to retain all its space at the airport until its activities are transferred around Oct. 1, but has been asked to reconsider its decision, as the action is holding up conversion of the field to commercial use.

► **North Bend, Ore.**—A revokable permit entitling North Bend to use three runways and a sea ramp built on the site of the former municipal airport for the North Bend auxiliary naval air training station has been granted by the Navy, which took the field over from the city in 1943 and developed it into a \$5,000,000 airport. The permit is expected to cover use of the field for commercial airlines and private flying until it is declared surplus and turned back to the city in its entirety.

► **Boise, Idaho**—City and airport officials are considering a bond election to raise funds to repair taxi-strips and aprons at municipal airport.

► **Wyoming**—Has completed a 10-year airport plan contemplating airports in three classifications: major, feederline, and small. A survey was prepared for state officials by Kaiser Engineers, Inc., Oakland, Calif.

► **Wisconsin**—Airport companies incorporated in June: Lake Mills Airports, non-stock, by H. L. Halverson, Oliver Tuller and H. A. Schmidt, all of Lake Mills, to promote aeronautical activities. Wisconsin-Minnesota-Dakota Airways, Wisconsin Rapids, by E. G. and Ellia Barnett and Byron B. Conway, both of Wisconsin Rapids, 200 shares of stock at \$10 each, to deal in airplanes and maintain airports and hangars.

► **Michigan**—State Attorney General holds that the Michigan Department of Aeronautics may spend funds for planning and specifications on new airports and use gas tax and license revenues to recondition fields abandoned during the war. Michigan's participation in the Federal program had been in doubt because of a state constitutional bar against expenditures for other than "internal improvements." The Department hopes to get started on a state supreme court this month to test the validity of the provision. A referendum on a constitutional amendment to correct the ban will be offered voters in November.

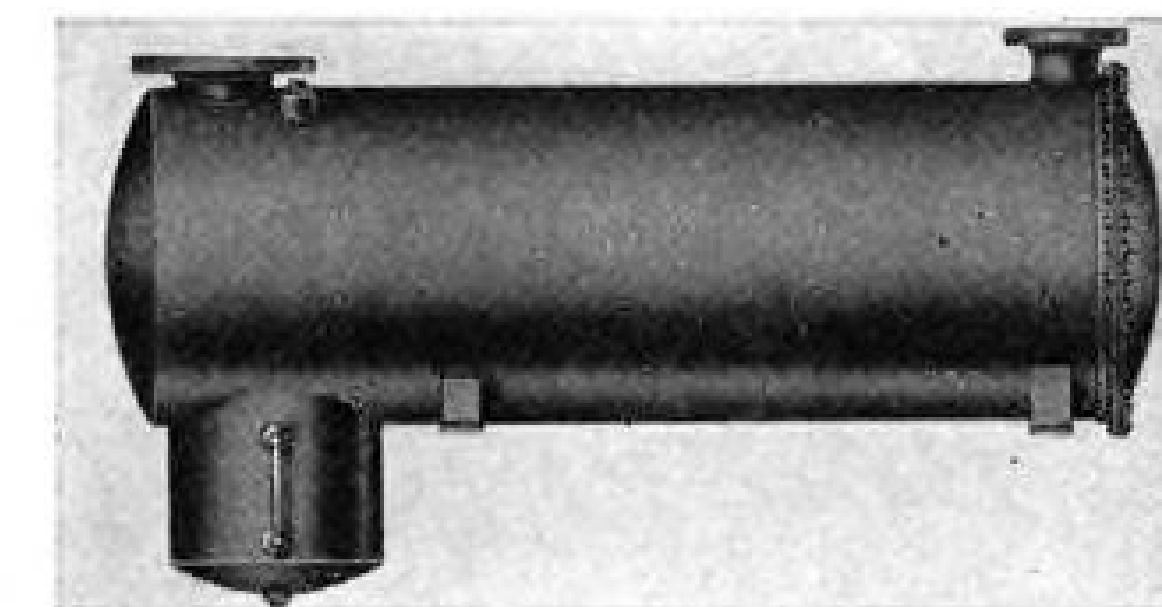
► **Rineanna Airport, Eire**—Expansion of the international terminal facilities is scheduled for completion by September to take care of an increasing flow of traffic which already has topped 600 landings a month.

► **Caracas, Venezuela**—Although unfinished, the new La Carlota airfield at Caracas has been opened officially to traffic. Commercial passenger planes will continue to use the international airfield at La Guaira, 23 highway miles from Caracas, while cargo and private planes use La Carlota until completed.

► **Madrid**—Work has begun on a new \$8,500,000 airport at Santander, Spain, and a \$3,600,000 loan has been authorized for work on fields at Madrid, Barcelona and Seville.

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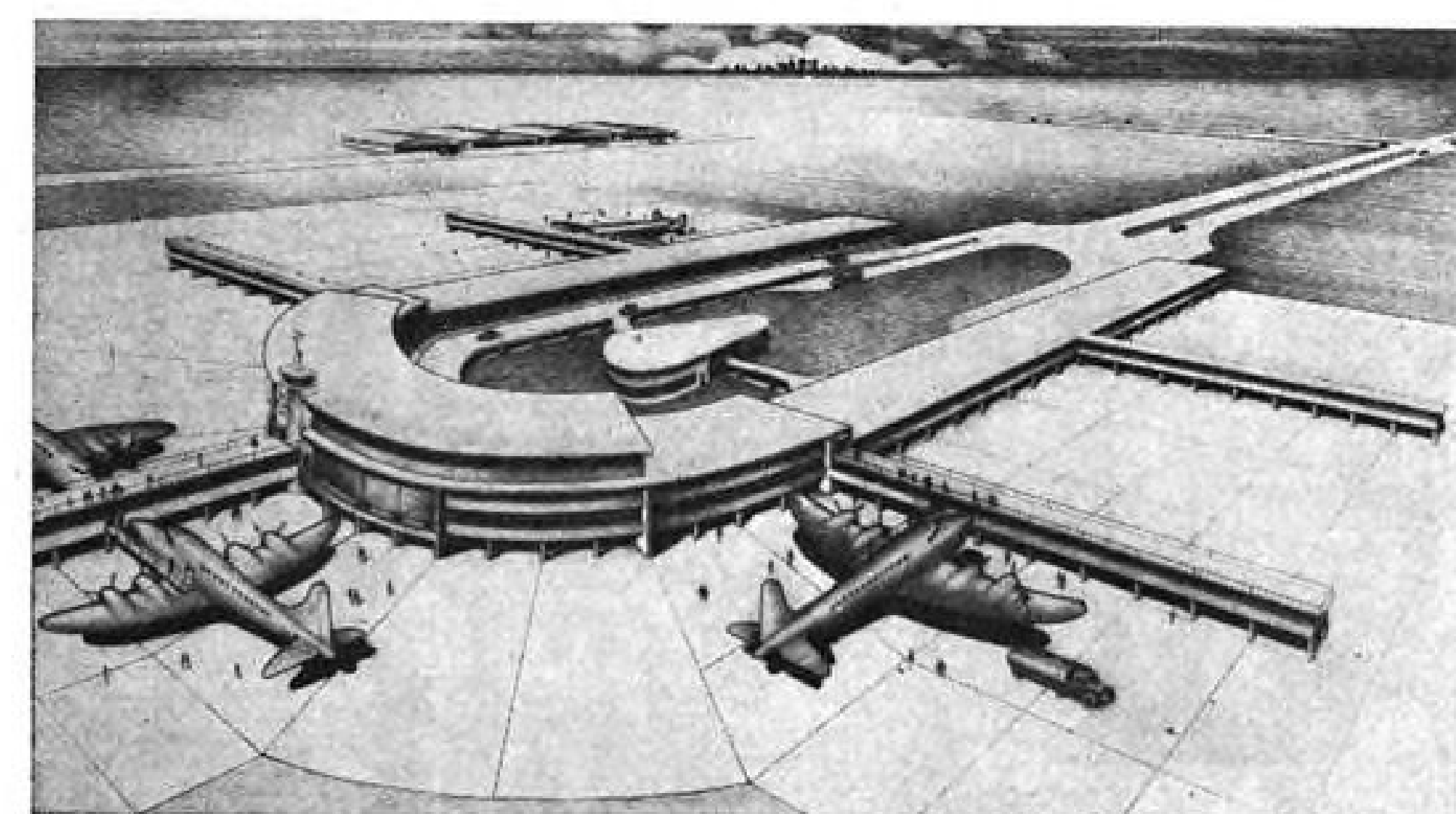
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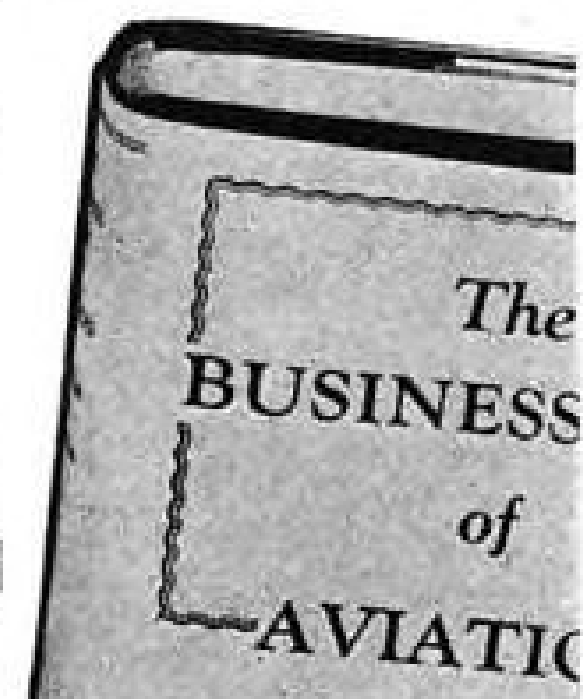
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Terminal In Houston's Plan: This \$1,700,000 international terminal is included in a \$6,000,000 improvement program for Houston's Municipal Airport on which a city bond issue will be submitted for approval July 27. The building would be erected on the north side of the expanded airport. Covered loading piers would be longer than the drawing indicates—300 ft. with space for three planes on each side, giving the terminal a capacity of 30 planes at a time.

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All American Asks CAB For Passengers Permit

All American Aviation has asked CAB permission to carry passengers between Pittsburgh and Elkins and Huntington, W. Va., in combination with its pick-up service on the route. The carrier is ready to start this operation immediately, according to Robert M. Love, president.

Noting that CAB in its West Coast area decision had shown enthusiasm for combination services, Love said granting of All American's application not only will meet the Board's expressed wish but enable the company to proceed with the next logical step in development of air pick-up.

All American now owns two Beech D-18C's, each equipped with a removable pick-up device per-

mitting carriage of four passengers with the equipment installed and eight passengers without the mechanism (AVIATION NEWS, May 13). AAA officials expect the Beechcraft to be certificated by Aug. 1.

PAA Official Predicts Lush Latin-American Business

Pan American predicted last week that the broad expansion program on which it has embarked will link U. S. points with Latin-American capitals on a daily commuter basis, carry 2,000,000 passengers and 30,000,000 lbs. of air freight annually, link all Latin-American markets directly with U. S. industrial centers, and eventually reduce travel, shipping and airmail rates to "domestic" levels.

Wilbur Morrison, PAA vice-pres-

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ident, declared at a press conference that fulfillment of the plan will make mass transportation available for the first time between North and South America. He foresaw for Pan American a fleet of 150 aircraft, of which the backbone would be 57 DC-4's, with greater cargo space, greater frequency of flights, and higher speeds. Major aim of the program, he said, will be to aid in developing trade volume between the Americas.

Pilot Error Is Blamed In Birmingham Crash

Pilot error in making a landing from an excessively high and fast approach probably caused the accident Jan. 6 involving a PCA DC-3 at Birmingham, Ala., Airport, according to a CAB report. Three crew members were killed and several passengers injured when the plane, landing in marginal weather, crashed in a creek after overshooting two-thirds of the runway. The Board noted that pilot fatigue, caused by a prolonged flight under adverse flying conditions, may have been a factor in the accident.

CAB SCHEDULE

- July 15. Prehearing conference on TWA's Italian agreement. (Docket 2337.)
- July 17. Briefs due in Arizona Airways' case for acquisition of TWA's AM 38. (Docket 2005.)
- July 22. Exchange of rebuttal exhibits in Arizona-New Mexico area case. Extended from July 5. (Docket 968 et al.)
- July 22. Written comment due on proposed amendment of section 292.1 of economic regulation, affecting non-scheduled air carriers.
- July 29. Briefs due in Southeastern States area case. Extended from July 16. (Docket 501 et al.)
- Aug. 1. Briefs due in route consolidation cases of Braniff Airways and Chicago and Southern Air Lines. Extended from July 19. (Docket 1154 et al.)
- Aug. 12. Hearing in Arizona-New Mexico area case. Postponed from July 22. (Docket 968 et al.)
- Sept. 9. Hearing in Los Angeles helicopter service case. Postponed from July 10. (Dockets 896 and 1821.)

CAB ACTION

- The Civil Aeronautics Board:
- Denied Eastern Air Lines' request to operate non-stop between Atlanta, Ga., and Tampa, Fla., on AM 40.
- Consolidated applications of Southern Arizona Airlines (Docket 2335) and American Airlines (Docket 2342) in Arizona-New Mexico area case. Dismissed application of Mrs. T. W. Lanier (Docket 1783) from same proceeding and permitted Eastern Air Lines to intervene in case.
- Permitted Pioneer Air Lines (Essair) to operate daily supplemental schedule between Houston and San Angelo via Austin, Tex., on AM 64 under temporary exemption.
- Consolidated air freight applications of 24 companies in Docket 810 et al. and permitted American, Braniff, Chicago and Southern, Eastern, Mid-Continent, Northwest TWA, United and Western to intervene.
- Denied Ellis Air Transport's request for exemption to carry persons and property (except mail) on irregular trips or on a regular route between Ketchikan, Alaska, and Prince Rupert, British Columbia.
- Dismissed route applications of TWA (Docket 1755) and Grant W. Madsen (Dockets 2172 and 2173) at applicants' requests.
- Permitted Page Airways to intervene in Middle Atlantic area case.

Pennsylvania Offers 10-Year Program for Airport Work

Pennsylvania has offered financial help to communities wishing to start work on airports without waiting until Fall to apply for Federal aid, the State Aeronautics Commission has announced through its executive director, William L. Anderson.

The Commonwealth has arranged a \$34,000,000 10-year program to match community expenditures to make local airports "flyable," leaving the question of U. S. funds for refinements until later. Anderson explained that many communities otherwise might lose a year or more of construction time, since the Civil Aeronautics Administration will not accept applications for Federal aid before Oct. 1.

Eastern Gets DC-4

Sixth of twenty 56-passenger DC-4's ordered by Eastern Air Lines has been delivered. The remainder probably will be received in the next several weeks, and all are expected to be in operation early in August. EAL also has 54 DC-3's, including two fitted exclusively for hauling cargo and freight loads.

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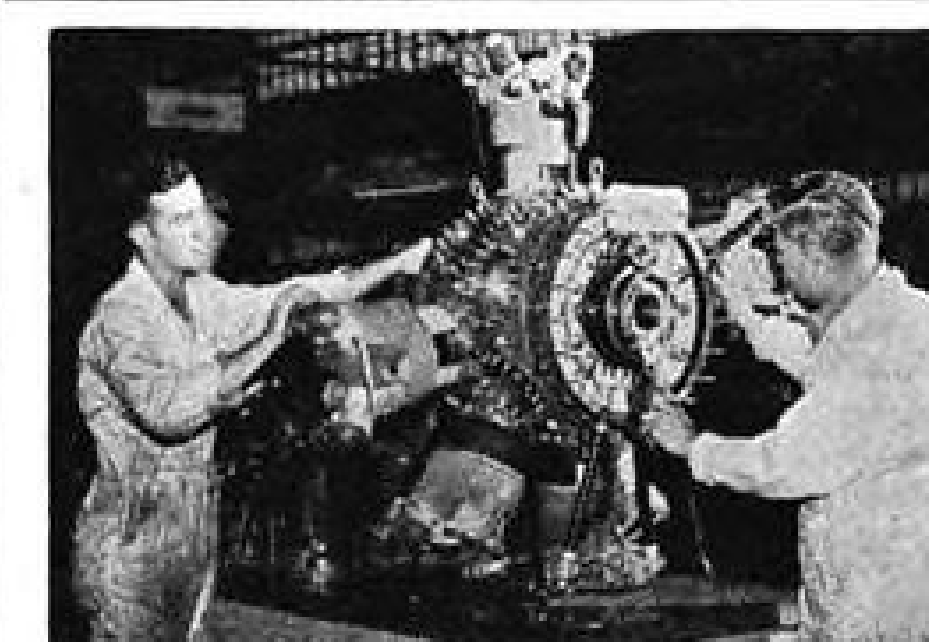
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Full Fares for Children?

THE LATEST full page magazine advertisement of the Air Transport Association is headed, "The Easiest Way to Travel With Children." A friend of ours, the father of three children, sends a tear-sheet of the ad with the penciled comment, "Not when you have to pay full fare for them!"

When you have to pay full fare for them. He has a strong point. We believe the advertising agency and the airline officials who approved the message have brought up a subject that might well have been unpublicized until the industry changes its policy of charging full rates for any child under two occupying a seat, and for all children over the age of two.

Many travelers unfamiliar with the airlines do not know about this full-fare custom, nor will they understand the reasons for it as readily as aviation people. The advertisement may well attract an increasing number of parents to ticket offices, where they will learn very quickly, but perhaps only after many plans have been made on a basis of one-half fares for children. The result can easily be disappointment, and unnecessary ill-will for the airlines.

Several lines already make an exception to the full fare practice for any child over two. They include Canadian Pacific, Hawaiian, TACA and Pan American, which carry children between two and twelve years of age at half fare rates and permit them to occupy seats.

No one in aviation takes issue with the full fare practice in these days of tremendous demand for seats and shortage of aircraft. But we believe it is wrong to bid publicly for family travel without telling the truth about children's fares in the same message. And we hope that all of the other airlines will make plans to follow the leadership of the four airlines mentioned above as soon as possible. It is another necessity if air transportation is to serve the whole public.

More Bureaucracy

THE REVIVED regulation waived during the war requiring annual inspection of aircraft has grounded hundreds of planes throughout the country, according to the alert United Pilots & Mechanics Association. Many owners simply have been unable to obtain the services of designated maintenance inspectors or CAA inspectors before the July 1 deadline. UPMA some time ago urged CAB to repeal section 43.22 and requested return of the 100-hour inspection for all planes. The CAB Safety Bureau's answer was that since the private owner is no longer required to have a 100-hour check, he should have an annual inspection.

"The private owners did not ask to be relieved of the 100-hour check, nor did they want the annual inspection restored," UPMA says. "The 100-hour check gave us a satisfactory safety record during the war, so why should we return to the 'horse and buggy days' of annual inspections that cause a lot of extra trouble and really do not accomplish anything that a 100-hour check wouldn't accomplish?"

What the Washington officials simply cannot understand, for some inexplicable reason, is that 100-hour checks could be obtained by the private plane owner from any one of some 20,000 licensed A&E mechanics who are available everywhere throughout the country. Yet there are hardly 750 persons in the entire country who are eligible to make an annual inspection—less than 200 CAA inspectors, and only some 550 aircraft maintenance inspectors. Still, these are the same government authorities who wail about shortages of staff and overworked inspectors as an alibi for the poor service to the public.

Is it any wonder that the long-abused and neglected aircraft owner cusses Washington?

IAT's Expensive Offer

THE INSTITUTE OF AIR TRANSPORT, representing many uncertificated and non-scheduled air carriers, recently offered to carry air mail for 3c. a letter. The statement won wide play in the press.

But it is not generally realized that most of the air mail already moves at a cost to the Post Office approximately one-fourth of the rate suggested by the IAT.

The average distance traversed by a domestic air mail letter, according to the Post Office, is 1,411 miles. The Post Office considers that there are about 40 letters to the pound. Therefore, at 3c. a letter the IAT carriers actually are requesting about \$1.71 a ton-mile.

In contrast, Eastern, American, TWA and United now receive only 45c. a ton-mile for carrying air mail.

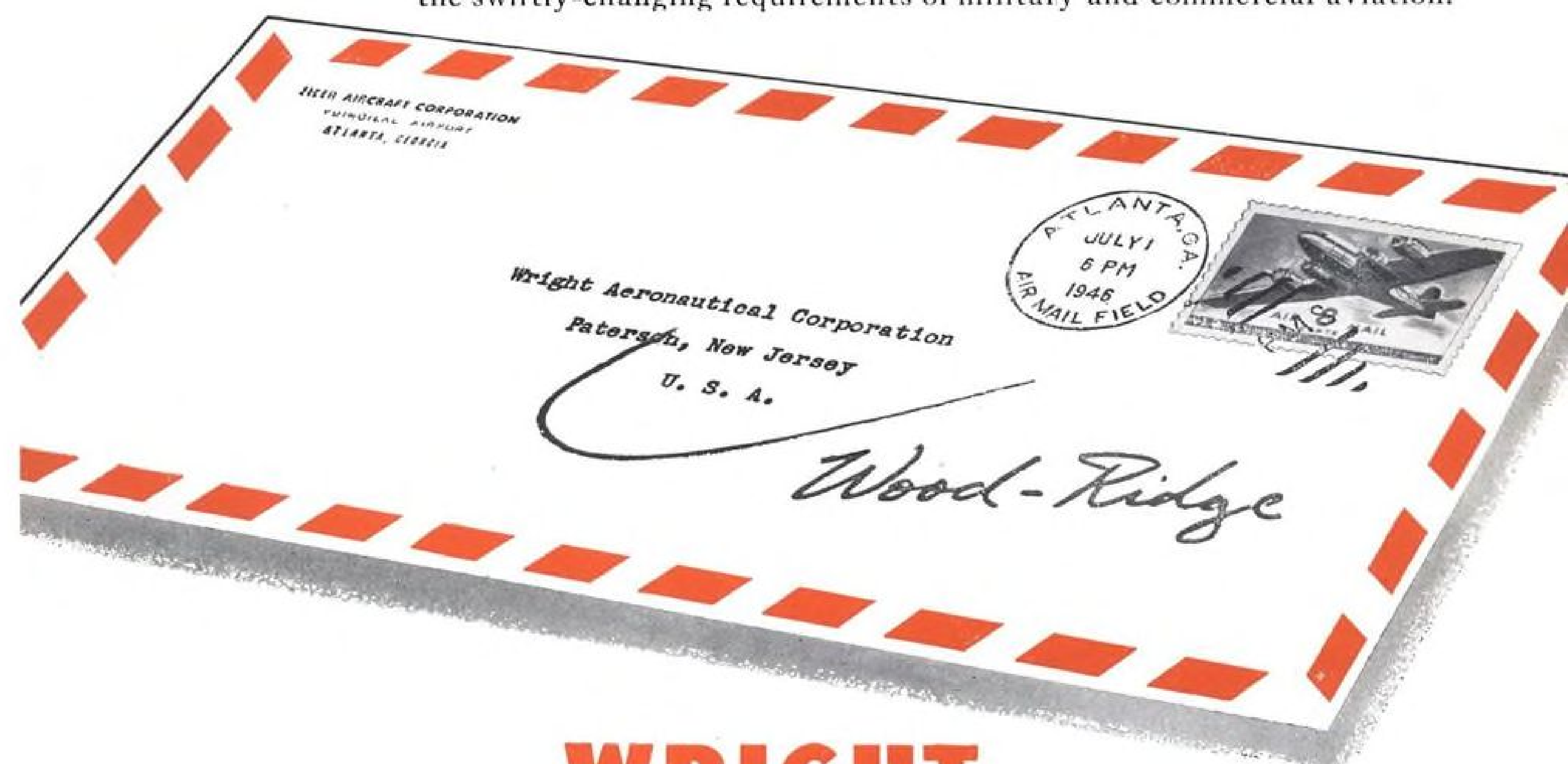
No Better Rocket?

ARMY AND NAVY had only 25 captured German V-2's to conduct their high-altitude tests, and are wondering how to continue after those are fired. Despite several fine predictions and surveys, all well publicized, nearly two years after the first V-2 made its appearance in England our services can boast no U.S.-made rocket that approaches the V-2 in size or speed.

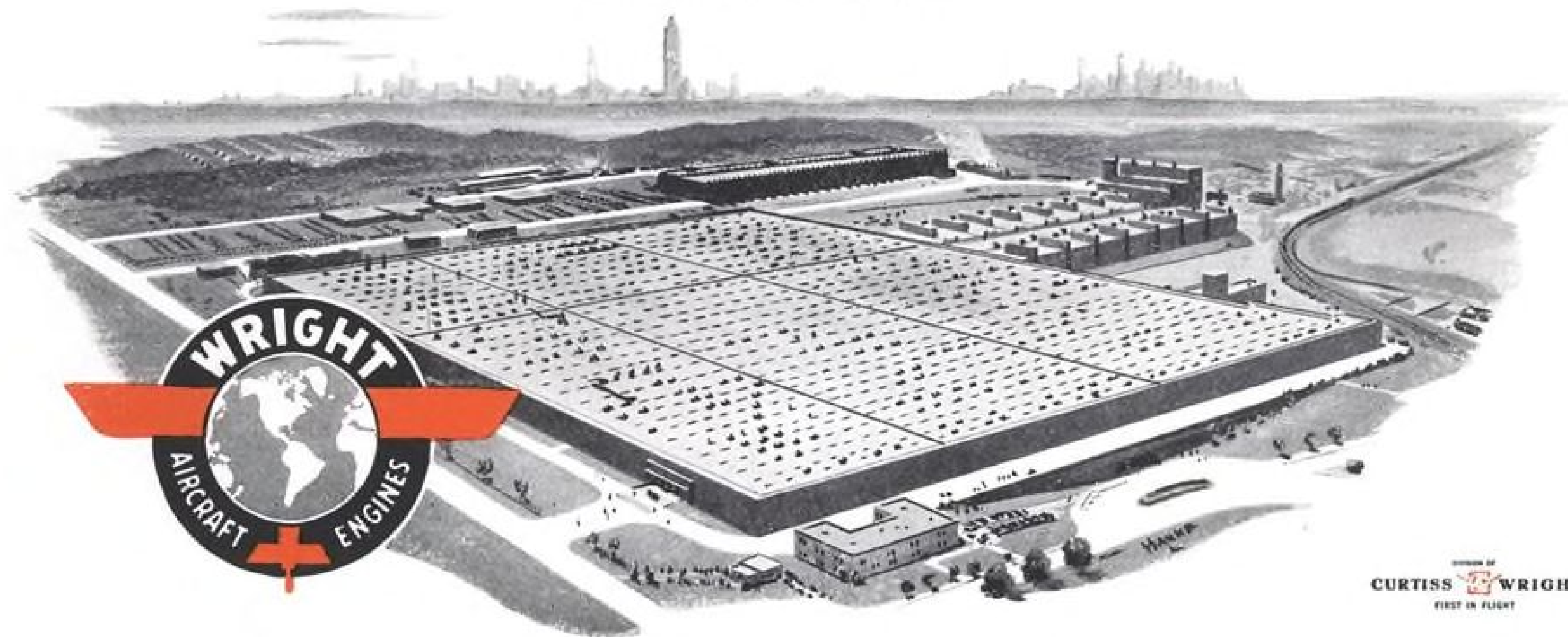
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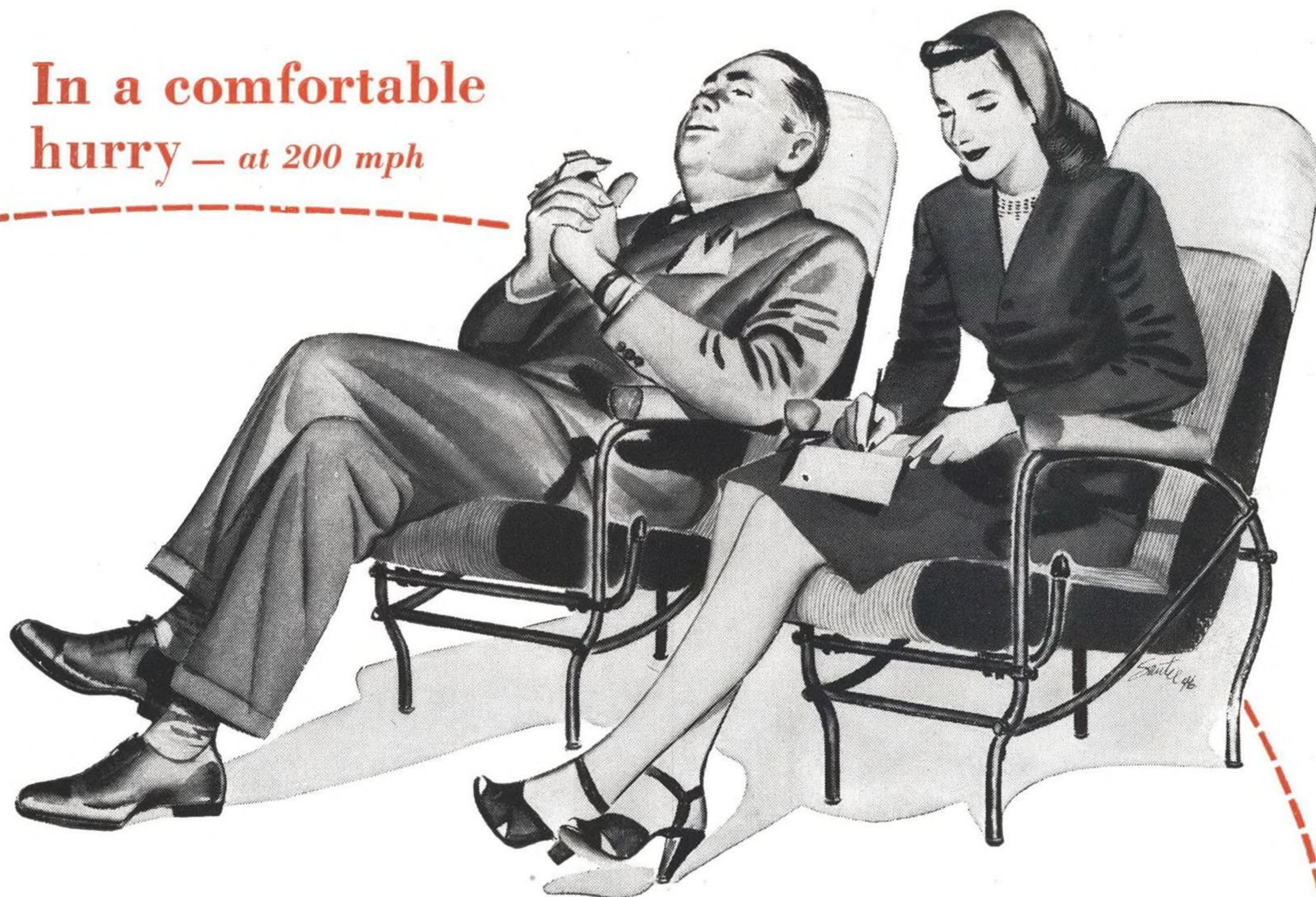


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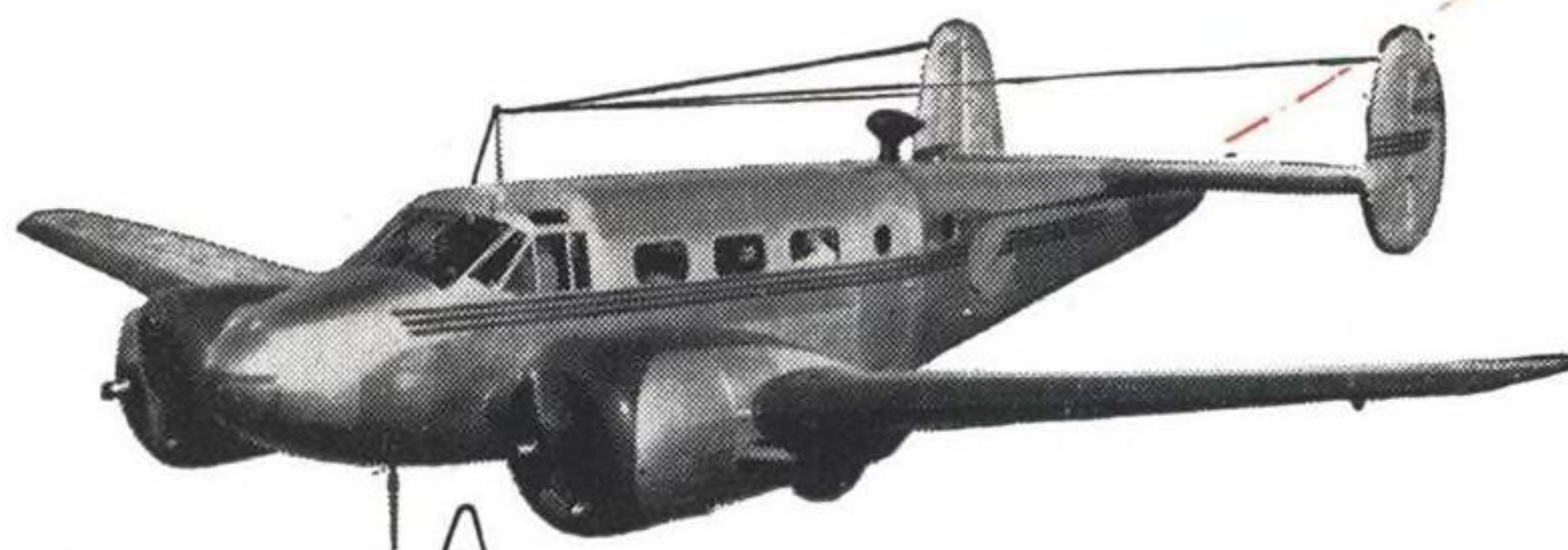


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