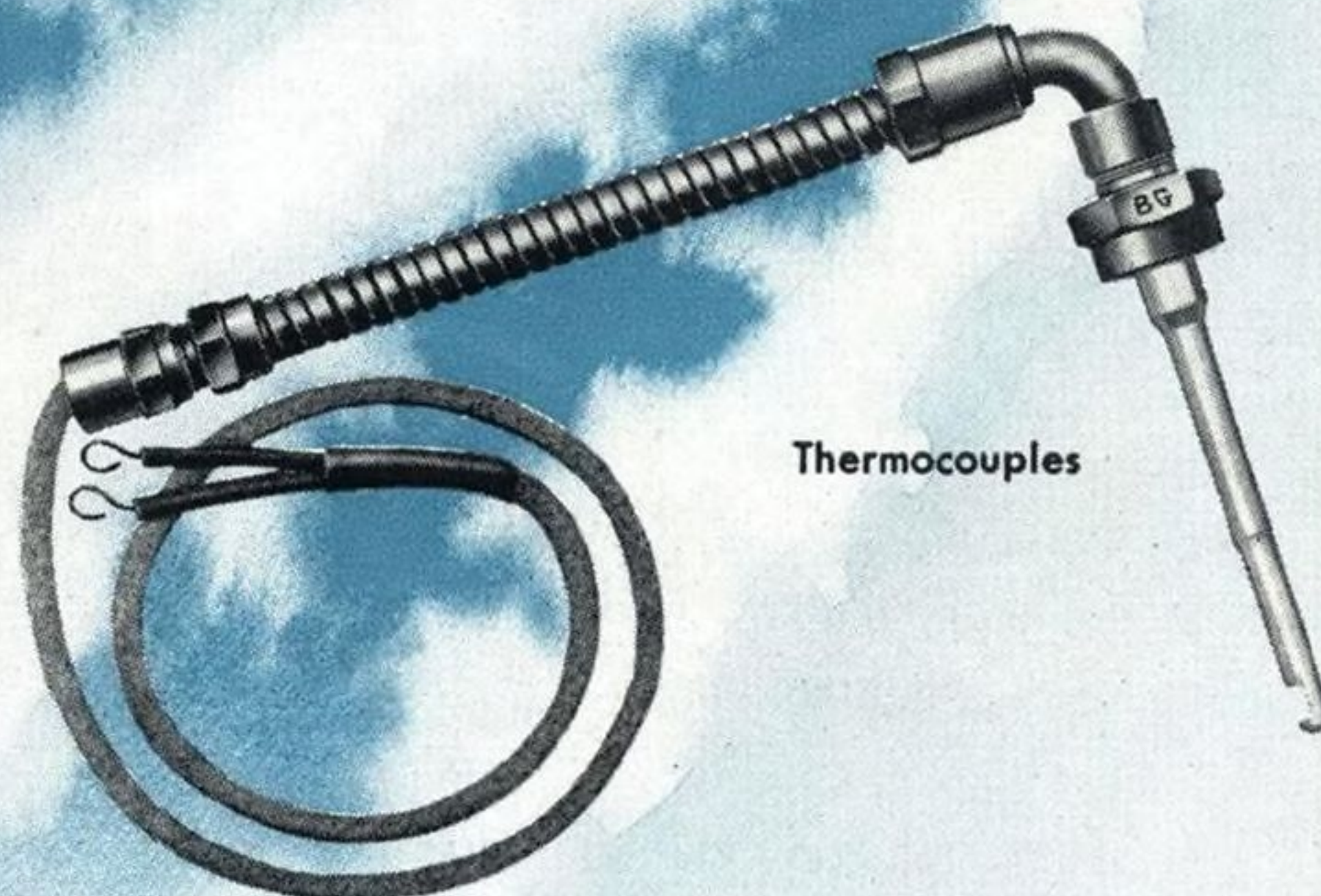
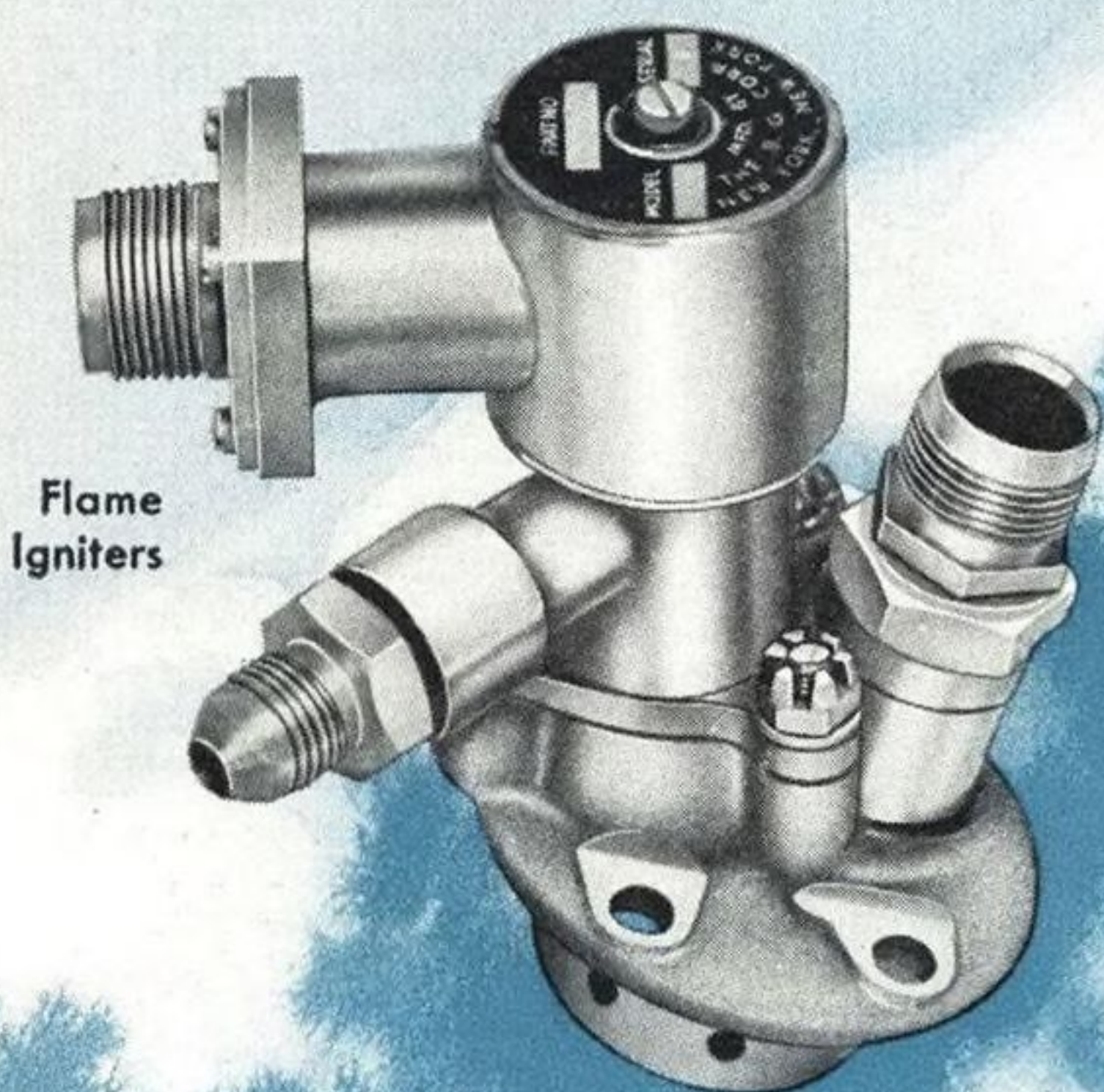


AVIATION WEEK

A MCGRAW-HILL PUBLICATION

JUNE 13, 1949

BG for JETS...



Pioneering in the field of aviation ignition is a familiar role to **BG** engineers. Alert to the newest requirements, **BG** has developed and is producing spark plugs, flame igniters and thermocouples for all types of jets and rockets. **BG** engineers will be glad to tell you more about these products and to assist you in the development of designs required for your special applications.

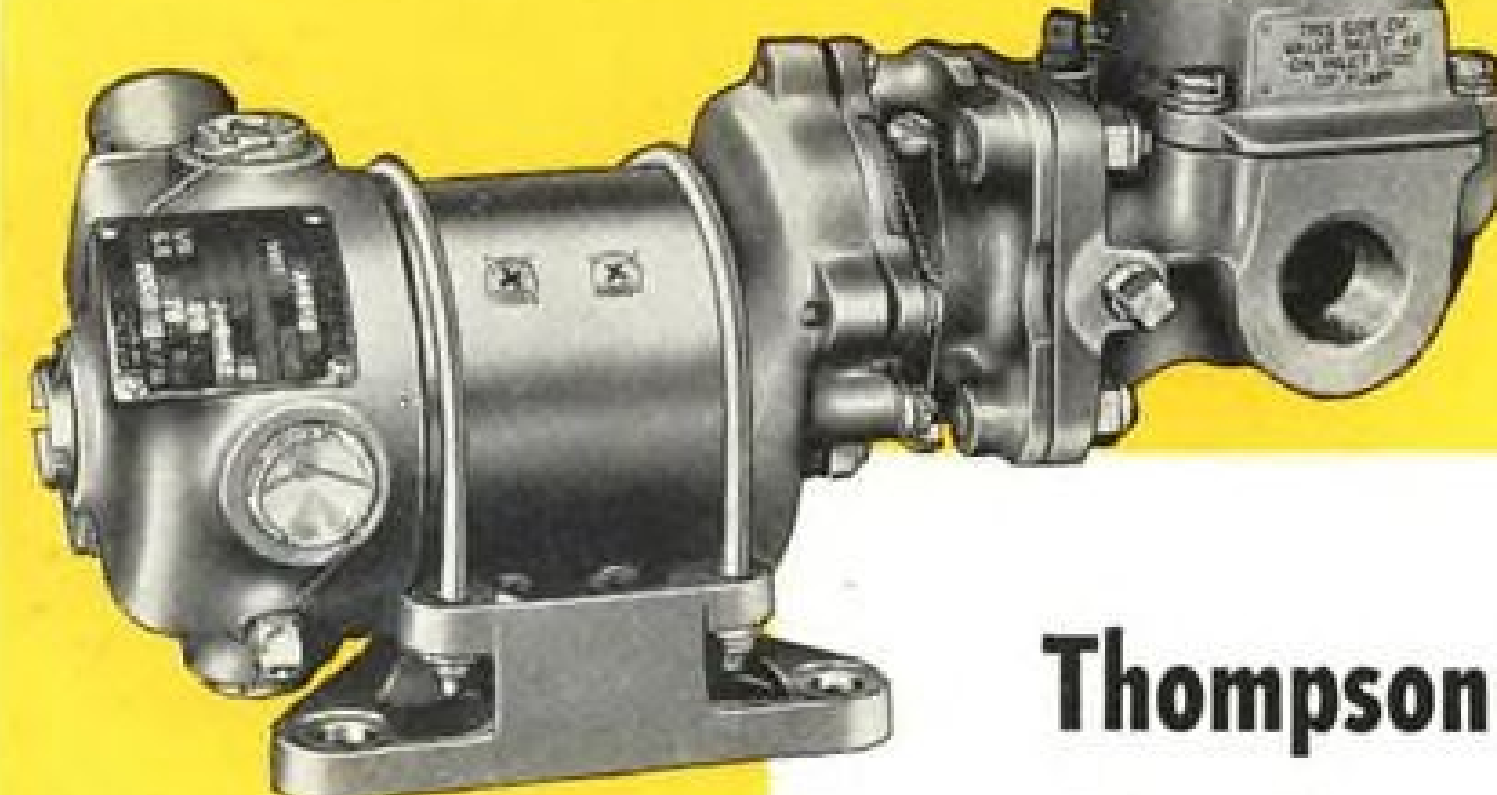
FOR AIRCRAFT ENGINES . . . AIRCRAFT SPARK PLUGS

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Electric motor-driven fuel pump.
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Engine-driven fuel pump for commercial aircraft—used as standard equipment by major airlines. Capacities from 200 to 700 gph at 2500 rpm.



Military aircraft engine-driven fuel pump. Capacities from 400 to 1200 gph at 2500 rpm. A-N Specifications 4101-1, and 4102-1, and AAF Type G-13.



Thompson Fuel Pumps are STANDARD EQUIPMENT for MAJOR AIRLINES

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OFFICIAL AIR FORCE PHOTOGRAPH

They cut a lot of ice with Airlift pilots

ACID test of success for the Berlin Airlift was whether it could fly in enough tonnage during last Winter. One of the biggest threats was the severe icing condition common to German winters.

To answer this threat, the Air Force equipped its C-54's with B. F. Goodrich De-Icers. One of them—49093—is shown above. A winterization station was set up near Munich where De-Icers were installed. Planes were grounded until De-Icer equipped.

This preparedness paid off. With De-Icers cutting the ice from wings

and empennage, planes stayed on schedule, pilots were able to deliver record tonnages.

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The De-Icer—safest ice-removal device for airplane leading edges yet developed—is another product of B. F. Goodrich aeronautical research. The B. F. Goodrich Company, Aeronautical Division, Akron, Ohio.

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AVIATION WEEK

Vol. 50, No. 24

June 13, 1949

News Sidelights	7	Engineering	21
Aviation Calendar	8	New Products	33
News Digest	9	Production	34
Industry Observer	9	Sales & Service	39
Headline News	11	Air Transport	41
Financial	18	What's New	52
Editorial	54		

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In Aviation, over-confidence can be fatal. Therefore confidence itself is not an easily-won badge. It can only be attained after the long, hard grind of actual performance.

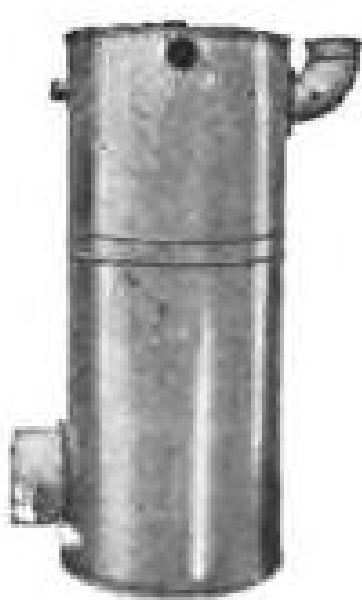
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AVIATION PRODUCTS

AVIATION WEEK, June 13, 1949

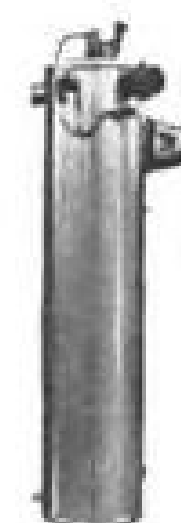
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S-200



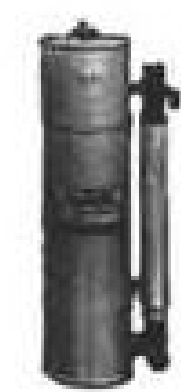
S-100



S-50



S-25



V-15

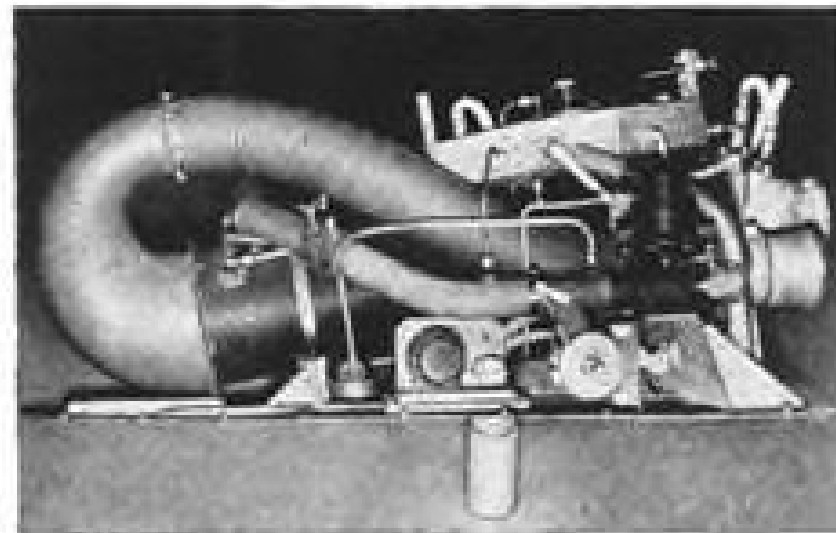


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The above letter, from one of America's finest commercial airlines, speaks for itself. It shows how teamwork between operator and supplier can lead to complete satisfaction. Janitrol cabin heaters on TWA's Connies have clocked up an average of 1500 operational hours per airplane and are still going strong. Constellation. (049) cabin heater and controls shown below.



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CONSTELLATION

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CENTRAL DISTRICT OFFICE, ENGINEERING DEVELOPMENT AND PRODUCTION, COLUMBUS, OHIO; HEADQUARTERS, TOLEDO, OHIO

NEWS SIDELIGHTS

Gag Withdrawn?

Chief press agent for the National Military Establishment, Bill Frye, has announced the withdrawal of Consolidation Directive No. 1.

This was the directive that applied NME censorship on grounds of "policy and propriety" in addition to security. Frye said the directive had been meant only to establish a consolidated security and review organization for the National Military Establishment.

Meanwhile, Frye's organization has been absorbing and breaking up the separate public relations groups operated by the Air Force, Army and Navy.

Star Routes

House of Representatives last week passed a bill granting the Postmaster General authority to expand air star route mail services—most of which would be conducted with lightplanes.

The legislation permits the Postmaster General to establish new air star mail routes whenever he finds them in the public interest because of the nature of the terrain or inadequacy of surface transportation.

Before advertising for bids to operate a new air star route, the Postmaster General would have to obtain a Civil Aeronautics Board declaration that the proposed link did not conflict with regularly-certificated airline operations.

Fatigue Problem

Aircraft fatigue life is rapidly becoming a major concern among the services, airlines and manufacturers. Bo Lundberg, noted Swedish engineer, has actually proposed a requirement for calculation of aircraft fatigue life to ICAO.

Combination of 75ST alloy and high wing loadings (notably on the Martin 2-0-2) has brought this new field into prominence. Tests now indicate that the high yield and ultimate strengths of 75ST are actually not available because of "notch sensitivity" of the material, which reduces its fatigue properties.

The term "notch" is used to define such machine configurations as drilled holes, sharp edges and irregular shapes as used in normal aircraft construction. Martin has replaced the 75ST in the spars of its 2-0-2 transports with conventional 24ST for this reason. Extrusions of 75ST actually have a lower notch fatigue value than ordinary 24ST. Engineers at the IAS-RAES

Convair Problem

Washington observers are watching to see what effect the Congressional investigation of the U. S. Air Force B-36 procurement program will have on its fiscal 1950 airplane buying schedule. This is now before the Senate Appropriations Committee as part of the National Military Establishment appropriation bill.

As tentatively drawn, the USAF fiscal 1950 aircraft program contained a large block of Convair business totalling close to \$500 million. These orders would be for about 80 additional B-36 bombers (69 in the regular schedule and 11 more from the \$851 million added by the House), some C-99 transports, 20 Convair-Liners for use as military cargo planes and 36 additional Convair-Liners modified as the T-29 twin engine trainer.

Unless its current plans are changed, USAF aims at building a striking force of 300 B-36s as the backbone of its Strategic Air Command. The fiscal 1950 program would make a total of 250 B-36s on order or delivered. Remainder of fiscal 1950 bomber funds are scheduled to go to Boeing Airplane Co. for about 100 additional Stratojet (B-47) bombers to be built at Wichita.

USAF hasn't announced it yet but the Boeing B-50 program will also get another small cut-back to bring the total B-50 force to 300 planes. About 334 B-50s have been delivered or are on order from Boeing.

conference agreed that 75ST was certainly the highest strength aluminum alloy acceptable until more data on notch fatigue sensitivity becomes

Tax Row

Sen. Edwin Johnson (D., Colo.), chairman of the Senate Interstate and Foreign Commerce Committee, opposes legislation setting a 15 percent tax on transportation tickets purchased in Mexico and Canada for transport from points in the United States.

The measure was introduced by Sen. Owen Brewster (R., Me.) and Sen. Howard McGrath (D., R.I.) to end the

present practice of U. S. passengers buying tickets from Canadian and Mexican offices to dodge the 15 percent U. S. transportation tax.

Johnson claims the Brewster-McGrath bill would wipe out the possibility for repeal of the domestic transportation tax, or its reduction to the prewar level of 5 percent.

An amendment repealing the transportation tax, offered by Johnson, was voted down in the Senate Finance Committee by a one-vote margin. Johnson plans to offer the amendment again on the floor when legislation repealing federal oleo taxes comes up for action. It has a fairly good chance for adoption.

Test Pilots Bonus

Lockheed Aircraft Corp. may be setting an industry policy with its offer of bonuses to test pilots who give up racing and stunt flying. Lockheed's chief test pilot "Tony" LeVier, a perennial fixture at the National Air Races and P-38 stunt pilot, received a bonus recently to pass up his extra-money activities at air shows and races. Now Herman "Fish" Salmon, Lockheed test pilot who last year won the Goodyear Trophy midget race at the National Air Races in Cleveland, has bowed out of racing under similar terms. Lockheed believes these pilots are so experienced in testing the company's latest developments that it is worth the extra money to keep them out of other hazardous flying.

Pilot Problem

Eastern Air Lines and the Air Line Pilots Assn. are jockeying for position in the impending contract negotiations. Biggest issue will involve Eastern's practice (unique among the airlines) of calculating its pilots' flying time as beginning when the plane's wheels leave the ground and ending when the plane taxis to the ramp after landing.

Other airlines use the block-to-block method that begins when the plane leaves the ramp and ends when its taxis back to the terminal. Pilots claim that under the Eastern system many of them are actually flying more than the CAA allowed minimum of 85 hr. per month as calculated by the block-to-block method.

Eastern pilots are pushing for the block-to-block method since it gives them more flight pay for less actual time in the air. Company is fighting it because it would mean hiring more pilots.

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VHF



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AVIATION CALENDAR

June 13-15—15th national applied mechanics division conference, American Society of Mechanical Engineers, University of Michigan, Ann Arbor.

June 16-17—Mid-year meeting, Aviation Distributors and Manufacturers Assn., Broadmoor Hotel, Colorado Springs.

June 17-18—Annual Ohio aviation clinic, Bowling Green State University.

June 18—Third annual air show, Anchorage, Alaska.

June 19-25—Colorado State Aviation Week, Colorado Springs.

June 20-24—Semi-annual meeting of the agency committee of the Air Transport Assn.

June 20-24—AIEE, summer general meeting, New Ocean House, Swampscott, Mass.

June 26-27—NAA 27th annual national convention, Akron, Ohio.

June 26-28—National Aeronautic Assn. 27th annual national convention, Akron, Ohio.

June 27-29—Formal dedication of Naval Ordnance Laboratory aeroballistics division, followed by five half-day technical sessions, White Oak, Silver Spring 19, Md.

June 27-July 1—1949 semi-annual meeting, American Society of Mechanical Engineers, University of California, Extension Bldg., 540 Powell St., San Francisco, Calif.

July 1-4—Third annual national convention and reunion Air Force Assn., Stevens Hotel, Chicago, Ill.

July 1-5—Florida State Air Tour.

July 2-10—National soaring contest, Harris Hill, Elmira, N. Y.

July 10-13—Annual meeting, Natl. Assn. of University Administrators of Aviation Education, Kent State University, Kent, Ohio.

July 21-22—IAS annual summer meeting, IAS Building, Los Angeles.

Aug. 6-14—1949 West Coast soaring championship, Palmdale Airport, Calif.

Sept. 1-7—Annual conference Federation Aeronautique Internationale, Cleveland, Ohio.

Sept. 1-7—International conference of Federation Aeronautique Internationale, Wade-Park Manor, Cleveland, Ohio.

Sept. 3-5—1949 National Air Races, Cleveland, Ohio.

Sept. 6-8—Annual spark plug and ignition conference, sponsored by Champion Spark Plug Co., Hotel Seor, Toledo, Ohio.

Sept. 7-11—10th Society of British Aircraft Constructors flying display and exhibition, Cranborough Airfield, Hampshire, England.

Sept. 12—IATA fifth annual general meeting, The Hague.

Nov. 9-11—Seventh annual meeting, Aviation Distributors and Manufacturers Assn., French Lick Springs Hotel, French Lick, Ind.

PICTURE CREDITS

12—Wide World; 13—McGraw-Hill World News; 15—British Information Service; 16—Combine; 21—Office of Naval Research; 25—McGraw-Hill World News; 29—AF Air Materiel Command; 41—Delta Air Lines; 43—TACA Airways.

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NEWS DIGEST

DOMESTIC

Strato-Freight Inc. C-46 believed to be carrying 81 persons crashed in the waters off San Juan, Puerto Rico last week with a possible loss of 54 lives.

Dr. Royal Weller, chief of the engineering department of the Naval Ordnance Laboratory, has been named chief scientist for the Naval Air Test Center, Point Mugu.

Formal election of Adm. DeWitt C. Ramsey, USN (Ret.), as president of the Aircraft Industries Assn. took place at the recently-concluded semi-annual meeting of the AIA board of governors at Williamsburg, Va. Harold Mansfield, director of public relations and advertising for Boeing Airplane Co., has been elected national chairman of the public relations advisory committee of AIA.

Wright Brothers papers have been given to the Library of Congress by executors of the estate of the late Orville Wright.

Earl F. Ward, technical assistant, airways operations service of CAA, died recently in Chicago. He was 52. He had been working on a plan to coordinate landing activities at major Chicago airports.

A DC-3 flew 2778 air miles from San Francisco to New York with a robot pilot at the controls for the entire trip. It was testing equipment developed by the Federal Telecommunications Laboratories, Inc., with assistance from Minneapolis-Honeywell Co.

USAF announced that the number of American airmen in Britain will be raised from 8000 to 12,000, on the assumption that the Berlin airlift will continue. If it stops, USAF says the men will not be needed.

Airfleets, Inc., proposed plane-leasing subsidiary of Consolidated Vultee, has not applied to the Reconstruction Finance Corp. for a loan, according to W. C. Rockefeller, vice president.

Jerome A. Butler, former news editor for Aviation News, predecessor to AVIATION WEEK, died in a Washington hospital. A Washington newspaperman, he also had been a writer in Chicago, New York and Paris.

FOREIGN

Fairey Aviation Co. Ltd. appointed John Norman Dennis rotary wing test pilot, replacing Foster H. Dixon, killed in the recent Gyrodyne crash (AVIATION WEEK, May 9).

INDUSTRY OBSERVER

► Beech Aircraft Corp. is designing a twin-engine model of its five-passenger Bonanza. The proposed model would be powered by two 185 hp. Continental engines housed in mid-wing nacelles. Very tentative sales price is now being discussed at around \$15,000. This project should not be confused with the experimental twin-engine Bonanza using two engines geared to a single propeller.

► American Airlines is studying possible substitution of the four-bladed Curtiss Electric propeller used on the wartime F-47 for the three-bladed propellers now used on its DC-6 and Convair-Liner. Reason is the large number of propeller hub cracks being discovered on the two AA transport types. American and Curtiss are still baffled on the cause of the cracks but are building up a voluminous case history on the subject. Cracks take about 1000 flight hours to grow from initial rupture to the hub surface.

► Navy has used GCA experimentally for bringing in planes to a carrier deck at sea. Initial tests indicated GCA can be used successfully to speed carrier plane landings during bad weather and at night. Navy will also experiment with the approach control timer now in use at CAA's La Guardia field control tower to see if it can be applied to carrier problems.

► Goodyear Rubber Co. will find increased Navy interest in its new experimental blimp design. Navy believes the blimp is still very much in the anti-submarine warfare picture partly because it is the only successful vehicle to date for a special type of anti-submarine detector capable of penetrating the depths at which new type subs can now operate. Use of the blimp based on carriers at sea has also lengthened its range and increased its endurance. Recently, carrier-based blimps stayed aloft continuously for more than 90 hours, refueling and changing crew in brief stops over the carrier.

► Military Air Transport Service is finding that its switch to bigger transports is paying off. Douglas C-74s operating from Mobile, Ala. to Frankfurt carry a payload of 22 C-54 engines, about two and a half times the capacity of a C-54. Lockheed C-121As operating from Westover AFB, to Frankfurt make five trips in the same time it took a C-54 to make four. The C-121A also carries 33 percent more passengers per trip, making its overall efficiency equivalent to that of two C-54s. Maj. Gen. Laurence S. Kuter, MATS commander, estimates that the seven C-74s now in use are doing the work of 20 C-54s.

► American Overseas Airline is modifying its Model 049 Constellations to handle a takeoff gross weight of 96,000 lb. This is 3000 lb. over present gross allowed by Civil Aeronautics Administration.

► Canada will spend between \$8 and \$15 million annually for a number of years to build a radar network to cover its major industrial areas and population centers, according to Canadian Defense Minister Brooke Claxton. This is in addition to the radar network planned by the United States.

► North American's NATIV, training guided missile, is 14 ft. 6 in. long and weighs 1237 lb. It is 18 inches in diameter. It is fired from a 125-ft. launching tower and reached an altitude of 50,000 ft. on its initial test firing. U. S. Air Force is scheduled to order production quantities of the NATIV for use in training missile launching crews.

► British Helicopter Assn. is working on plans for developing a fleet of 10- and 24-passenger helicopters to link airports in the London metropolitan area with the center of the city. Floating platforms along the Thames river are planned for the downtown landing spots.



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Vol. 50, No. 24

AVIATION WEEK

June 13, 1949

CAA Chief Rentzel Appoints 'Cabinet'

Four relative newcomers to agency get highest jobs directly under administrator.

By Alexander McSurely

Reorganization of CAA last week put four men, all relative newcomers in the big federal agency, into the key top level administrative posts under Administrator Delos W. Rentzel.

The new Rentzel cabinet:

- Donald W. Nyrop, deputy administrator for operations.
- Frederick B. Lee, deputy administrator for plans.
- Edward M. Sturhahn, executive assistant to administrator.
- Capt. Charles F. Horne, director of airways.

Other Washington CAA staff offices and most top regional offices remained in the hands of CAA old-timers, although several of these posts have been shuffled in the eight months reorganization period.

► **Airport Director**—Phillips Moore is director of airports. His deputy, Edgar N. Smith, has been transferred to deputy regional administrator at Atlanta and his duties redistributed within the Office of Airports.

E. S. Hensley continues as director of aviation safety, Donald Stuart as di-

rector of technical development, Richard Elwell as general counsel, and Ben Stern as director of aviation information, with Wiley Wright, as previously reported, heading the new Office of Aviation Development.

► **Nyrop Post**—Nyrop's new post, in charge of budget, personnel and management, makes him definitely the No. 2 man in CAA, resulting in an apparent step-down for the senior deputy administrator, Lee. The somewhat indefinite assignment of Lee charges him with coordination of planning of Washington office programs and evaluation of regional performance.

Nyrop had been executive assistant to Rentzel since August, 1948, coming to CAA from Air Transport Assn. He served in Air Transport Command from 1942 to 1946, terminating his service as a lieutenant colonel and executive operations officer at ATC headquarters. Previously he had been executive assistant to the CAB chairman and an attorney for CAB.

► **Sturhahn Shift**—Sturhahn goes to his new post from that of director of business administration, which is being consolidated under Nyrop with other

offices. Sturhahn had previously served as executive assistant to former Administrator T. P. Wright and formerly served with Air Technical Service Command at Wright Field.

Capt. Horne who is on loan to CAA from the Navy was special assistant to Rentzel on air navigation problems before taking over his new post. He replaces William E. Kline who has been transferred to regional administrator at Seattle. Kline replaces Robert Bedinger who will be transferred to Washington to take a post not yet announced.

► **Airways Deal**—The new airways head occupies probably the most important technical post in CAA with the emphasis which is being placed on the development of air navigation aids under the long-term RTCA program. He came to Rentzel after serving as deputy chief of Navy communications, and was communications officer of U. S. amphibious forces in the Pacific campaigns from Tarawa to Okinawa.

Assisting Horne in airways will be John Beardslee, former CAA regional administrator at Honolulu, transferred to deputy director of airways.

The new re-alignment puts Al S. Koch, who has held a series of other high level CAA offices, into the new job of international regional administrator. Before his present assignment Koch had moved successively from director of program planning and evaluation, from assistant administrator for safety regulation, and from director of field operations. The field operations post involved CAA international activities. Koch also served as a lieutenant colonel in the Air Force in World War II.

The new international region office will co-ordinate all airline certificates for international route operations. Currently they are administered in several regional offices, depending on the location of the American terminal of the route. The region will also direct activities under Public Law 647 which authorizes U. S. air navigation aid to foreign countries, under the ICAO program for joint support of international air commerce facilities; and direct CAA missions to foreign countries.

► **Staff School**—In an effort to get higher caliber administrative work in the agency, Rentzel has announced plans for a staff school to be conducted probably in Washington or Oklahoma City,



Donald W. Nyrop



Charles F. Horne

AVIATION WEEK, June 13, 1949

HEADLINE NEWS

11

for uniform training in good administrative procedures.

Responding to some industry complaints about lack of uniformity in aircraft type certification requirements, the Washington office will send representatives to serve on regional certification boards which will act on aircraft type approvals.

► **Airport Aid**—Additional changes designed to simplify further the CAA airport aid program also were announced. In general these changes give additional power to regional offices, although it is stated that the Washington airports office retains uniform policy control over the regions.

TWA's 20 Connies Will Replace DC-3s

Lockheed Aircraft Corp.'s total Constellation sales soared to 208 when TWA purchased 20 of the Model 749 transports for \$20 million.

The latest order, together with others now on the books, assures continuance of Lockheed's Constellation production line through 1950. First deliveries under the new contract with TWA are expected next April.

► **DC-3 Replacements**—TWA's Constellation fleet will be increased to 55 when the last of the 20 are received around January, 1951. A number of TWA's domestic DC-3s will be retired by the new Connies, and the carrier's overseas DC-4s probably will be put in all-cargo service.

Number of domestic cities receiving Constellation service from TWA is expected to increase to about 23—against 14 at present—when the full 55-plane fleet is available. TWA has not yet purchased twin-engine replacements for its more than 60 DC-3s.

► **Purchase Terms**—Ralph S. Damon, TWA president, said his company would pay 25 percent in cash out of its own funds on the \$20 million Connie order. Remainder will be financed by a group of banks headed by the Mellon interests in Pittsburgh.

In announcing the Constellation order, Damon predicted that his company's passenger business would increase 11 percent this year and improve further in 1950. He reiterated that he does not expect the U. S. to adopt a "chosen instrument" flag line.

Besides the 55 planes bought by TWA, Lockheed's sales of 208 Constellations include orders from Eastern Air Lines, Pan American Airways, KLM, Air France, BOAC, Air India, Linea Aeropostal Venezolana, South African Airways, U. S. Air Force and Navy. By comparison, Boeing has sold 55 Stratocruisers commercially, plus 63 Stratofreighters to the Air Force; Douglas has sold 149 DC-6s to the airlines.



B-36 ON RACK: While Washington prepares to look into procurement of B-36, Wright Field is completing static tests on first production model of the bomber.

B-36 Probe Widens in Scope

House committee investigation to include Navy's super-carrier plan; Symington denies Van Zandt charges.

Congressional investigation into the U. S. Air Force B-36 program promised last week to broaden into a general debate on U. S. military policy.

Significant developments included:

- **Promise to include** an investigation of the Navy's 65,000-ton super-carrier program and the source of the "whispering campaign" against the B-36 in the probe by Rep. Carl A. Vinson (D., Ga.). Inclusion of these two subjects on the probe agenda was interpreted as giving the USAF an opportunity to launch a counter-attack against the Navy, which USAF credits, as the source of much unofficial criticism of the B-36 in particular and strategic bombing theory in general.

- **Vigorous denial** by Air Secretary W. Stuart Symington of the statements made by Rep. James A. Van Zandt from the legal immunity of the House floor regarding Symington's alleged relations with Floyd B. Odium and Consolidated Vultee Aircraft Corp.

- **Approval by House Rules Committee** of the resolution financing the investigation of the B-36 by Vinson's Armed Services Committee. Speedy passage of the resolution by the House was anticipated.

- **Cancellation of the public test** between the Convair B-36 bomber and the McDonnell Banshee (F2H-2) jet fighter requested by the House Armed Services

Committee as an evaluation of Navy fighter claims against the USAF inter-continental bomber.

Joint Chiefs of Staff recommended against a public test and indicated that a more thorough evaluation of the B-36 and its counter-weapons would be made but results would not be made public for security reasons. Vinson accepted the JCS recommendations and withdrew his request for a public test.

Meanwhile action on two important items of military legislation awaited outcome of the B-36 investigation. Indications were that neither the 70 group Air Force bill now before the Senate Armed Services Committee nor the Tydings bill giving new power to the Secretary of Defense and now before the Vinson group would be reported out of committees until all the evidence uncovered by the B-36 investigators was on the record.

► **Sabath Objects**—House Rules Committee Chairman, Rep. Adolph Sabath (D., Ill.) and Rep. Eugene Cox, (D., Ga.), objected strongly to authorizing the B-36 investigation.

"An investigation is giving Van Zandt's charges an importance they do not deserve," Cox snapped. Instead of having an investigation, he ought to publicly withdraw his charges and publicly apologize." Sabath pointed out that "the charges according to Van

Zandt himself are only based on rumors and newspaper stories."

Vinson won over the two Rules Committeemen by vouching that "the rumors are widespread and are damaging to the reputation of the armed services."

He argued that best way to quell them is "with the truth," and read a letter from Symington (denying all Van Zandt's charges) endorsing the investigation.

► **Probe Innuendo**—"We are going to find out where these innuendoes come from and why," Vinson commented on the charges.

"We all have the utmost confidence in the patriotism of Symington, but this investigation is vital to re-establish public confidence, which has been undermined, in the military program," Rep. Clarence Brown (R., O.), a high-ranking Rules Committeeman declared.

Rep. Dewey Short (R., Mo.) said that the Armed Services Committee would "do its best" to engage "an unbiased expert" to direct the investigation.

► **Van Zandt Report**—Van Zandt reported that he "grew up with amphibious warfare" as a naval officer in the last war, and knew first-hand that "it spelled success in the Pacific." Stating that he is "for strong national defense, particularly the Navy," Van Zandt commented that he now attends Naval Reserve drills twice weekly, but emphasized that he has been a strong supporter of USAF's 70-group air force program.

He said that he first started thinking about an investigation early this year when Symington, during testimony on the 70-group authorization bill, observed that "snipers and hatchet men are out to get the B-36."

Following is the text of Symington's denial:

June 2, 1949

Honorable Carl Vinson
House of Representatives
Washington, D. C.
Dear Mr. Chairman:

The Air Force heartily concurs in the resolution which you have offered calling for an investigation of the B-36 and 'collateral matters.' You may be assured of our full cooperation in the conduct of the investigation.

The B-36 is a vital cog in our national security mechanism. The public and the Congress should be fully informed concerning it within such security limits as may be deemed appropriate—the way this airplane was developed, the troubles it went through, the strategic purpose it serves, the tactical use to which it is to be put, the alternatives that were presented, the decisions that were made, and the reasons back of those decisions.

On May 26 Mr. Van Zandt made a speech in the House of Representatives repeating certain anonymous statements at-



LONG RANGE BOMBER

New flight photo of A. V. Roe's Shackleton, long range bomber-reconnaissance plane, shows its four Rolls-Royce Griffon 57 engines and the H2S anti-sub search radar

radome. Craft was developed from Avro's Lincoln, but has undergone several modifications. Craft is designed to cruise about 6000 miles at better than 200 mph.

tacking the integrity of Air Force action concerning the B-36. The rumors he publicized should be answered now.

Mr. Van Zandt's basic innuendo is that the B-36 picture is riddled with politics, influence and disregard of the military security of the country. I deny this categorically.

At no time since I have been Secretary has any higher authority attempted to recommend in any way the purchase of any airplane. Every airplane that has been purchased by the Air Force since I have been Secretary was recommended to me by the Chief of Staff of the Air Force and his Staff. In addition, every major change in the B-36 program to which Mr. Van Zandt's innuendoes relate has been made only after the recommendation of the head of the Air Materiel Command (General McNarney), the head of Plans and Operations (General Norstad), the Chief of Staff of the Air Force (General Vandenberg), and the Under Secretary of the Air Force (Mr. Barrows), the last a Republican if that is material.

Specifically, Mr. Forrestal did not 'refuse to approve' the B-36 modification program or believe there were any 'irregularities' in it. I deny the implications in the statement that Mr. Johnson 'issued orders in great haste' to award a B-36 modification contract. His action in approving Air Force plans for the B-36 followed the same pattern as was followed during the administration of Mr. Forrestal. Since Mr. Johnson's confirmation as Secretary of Defense, I have of course discussed the B-36 with him. Before that time I never discussed with him the B-36 or any other airplane we are procuring. Secretary Johnson had no part whatever in the establishment of any part of the B-36 program.

Mr. Van Zandt has made several other accusations concerning my alleged personal interest in the B-36 program. He discloses reports to him that there is to be 'a huge aircraft combine under the control of Mr. Odium,' and that I plan to resign as Secretary of the Air Force and head this 'com-

bine.' Never directly or indirectly have I discussed any kind of position with Mr. Odium or his associates or with any other plane manufacturer. For Mr. Odium to have brought such a proposal to me or for me to have entertained it would have been highly improper, probably a violation of my Oath of Office. It never happened. The report is a lie.

Mr. Van Zandt's statement that I am 'a frequent week-end visitor at the Palm Springs, California, ranch home of Mr. Odium and his wife, the former Jacqueline Cochrane' is apparently adduced to support this story. The facts are: I have visited Mr. Odium's house in Palm Springs twice. The first time was on December 5, 1947, when I and a party on an inspection trip landed at Palm Springs instead of our coast destination because of weather. Mrs. Odium was at the airport and asked us all out to dinner. Mr. Odium was not there. The second time was on March 19, 1949, when I flew to California on Air Force business and stopped at Palm Springs to talk to Mr. Odium about several Air Force matters, including B-36 production. I arrived in the late afternoon and left early the following morning.

Mr. Van Zandt's remaining assertions concerning me relate to war-time aircraft turret contracts of Emerson Electric Manufacturing Company, a firm of which I was formerly President. I severed all connections with this firm when I entered Government service in 1945. To the extent that my knowledge goes, Mr. Van Zandt's assertions are untrue. I feel bound to add that I am unable to observe any connection between these charges and the B-36 program.

Mr. Chairman, these accusations are damaging to the good name of the armed services, to the morale of the patriotic men who serve in them, and to the national interest; and I trust it will prove possible, when they have been fully explored, to trace them to their source.

Sincerely yours,
(Signed) W. STUART SYMINGTON

Say Canada Bests U. S. in Horsetrade

Fears that the U. S. is being outbar-gained in negotiating air transport agree-ments with other countries were strongly expressed last week in both industry and congressional quarters when terms of a new bilateral pact with Canada were disclosed.

The agreement grants these conces-sions to Canada:

- A route between New York and Montreal directly paralleling a link now operated by Colonial Airlines.
- Traffic rights at Honolulu on a through route from Vancouver to Aus-tralasia.
- Traffic rights at Tampa-St. Peters-burg, Fla., on a through route to the Bahamas and Caribbean points.
- For this, the U. S. obtained:
- Continued traffic rights at Gander, Newfoundland, on the trans-Atlantic routes of Pan American Airways, Ameri-can Overseas Airlines and TWA.
- A route from New York to Toronto directly paralleling an existing Canadian link.
- A route from Great Falls, Mont., to Edmonton, Alberta, together with traf-fic rights at Edmonton on Northwest Airlines' link to Alaska and the Orient.

Colonial Airlines, which will now have stiff competition over its best route, labeled the new agreement "sub-stantially a complete sellout of the Americans."

Rep. Carl Hinshaw (R., Calif.) charged the pact "exchanged one U. S. horse for one Canadian rabbit." He suggested revising the law to provide that such agreements must receive con-gressional approval before they become effective.

► **Explanation To Senate**—Sen. Edwin Johnson (D., Colo.), chairman of the

Senate Interstate and Foreign Com-merce Committee, called on State De-partment and Civil Aeronautics Board officials responsible for the pact to ex-plain its provisions to his committee. He expressed some doubt as to the pact's legality.

Colonial Airlines president Sigmund Janas said that granting Canada a Montreal-New York route is likely to cost the American taxpayers more than \$1 million annually in additional sub-sidies. Trans-Canada Air Lines will probably operate the link with four-engine North Stars. Colonial uses DC-3s.

Over 60 percent of Colonial's re-venues come from the New York-Montreal route which is now subject to traffic diversion. Janas said the price paid by the Canadians for this valuable franchise is practically nothing. "This action," he declared, "forces Americans to look to Congress to protect their rights."

► **Overseas Threat**—Trans-Canada Air Lines, which also operates overseas to London, may tap the lush New York-Europe traffic through the New York-Montreal link.

CAB chairman Joseph O'Connell and Board member Russell Adams, who headed the U. S. delegation which met with the Canadians, described the pact as "an excellent one from the American standpoint." They said it would have been practically impossible to continue to bar Canada from flying the route between its largest city (Montreal) and New York.

Besides, they pointed out, U. S. flag carriers will continue to get \$1 million in connecting traffic at Gander and much more of the business on the New York-Toronto run, where the Canadians have handled over 80 percent of the passengers in the past. "I won't concede that we gave up more than we got," Adams declared.

► **Methods Defended**—The CAB mem-ber denied Colonial's charge that the representative of the American carriers in the negotiations—Stuart Tipton, Air Transport Assn. counsel—was so sworn to secrecy that he was unable to main-tain contact with his principals, al-though the head of Trans-Canada Air Lines was permitted to act as one of the Canadian negotiators.

"Tipton was a full member of the U. S. delegation, and no step was taken at the conference without his knowledge and discussions with him," Adams stated. "He was perfectly free to con-sult with the carriers he represented."

Adams told AVIATION WEEK that other U. S. government agencies had not asked American negotiators to be liberal in granting Canada traffic rights to strengthen the Dominion's dollar-earning position. "Canada didn't get all they wanted; and we got a good deal," he insisted.

► **U. S. Hand Forced**—American officials said that Canada had wanted to revise the former air transport agreement with the U. S. for about two years. Our gov-ernment delayed as long as possible, realizing that the Canadians would re-quest additional traffic concessions.

But the U. S. hand was forced several months ago when Newfoundland be-came part of Canada. The Canadians promptly announced they would not continue U. S. traffic rights at Gander beyond June 30.

First York Moves to Boost Bell Holdings

First York Corp. wants to strengthen its investment in Bell Aircraft Corp. by offering to buy 56,000 shares at \$14.50 per share—\$2 above market price.

Letters have been sent to all Bell

stockholders inviting tenders. The move follows First York's original offer to acquire 150,000 shares of Bell at \$18.50 per share in Jan., 1948. First York, with its affiliates, now owns 162,944 shares or approximately 37 percent of Bell's outstanding stock.

Acquisition of the additional 56,000 shares would give First York, a member of the Equity Corp. group, about half of the entire Bell shares. Earlier this year Equity attempted to accomplish the same objective by trading other properties it owned for additional Bell shares, but the move fell through.

David M. Milton, president of First York and a Bell director, said "no pro-posal for changing Bell's policies or management is under consideration." Lawrence D. Bell, founder of the cor-poration in 1935, and other officers were recently reelected at a regular board of directors meeting.

Milton said that First York has "had the most cordial relationship with Larry Bell and his associates in Bell manage-ment and the acquisition of additional stock reflects our confidence in this relationship."

Bell added: "Our company's associa-tion with First York Corp. as a sub-stantial stockholder has been most con-structive and helpful. At all times Bell management has received full and en-thusiastic support in the operations of the company."

First York's letter said that tenders will be considered in the order received and that the offer will be good until the close of business June 27.

Boutelle, Flood Join Sherman Fairchild

Sherman Fairchild last week had won some converts in the management of Fairchild Engine & Airplane Corp.

Richard S. Boutelle, vice president and general manager of the Hagerstown Airplane Division, told the other mem-

bers of the corporation board of direc-tors he was joining the Sherman Fair-child group which is proposing its own slate of directors at the annual meeting July 6. He was promptly ousted from his job, but remains on the board and probably will be on the opposition slate of directors.

► **Then Flood**—Next, A. F. Flood, as-sistant comptroller at Hagerstown, de-clared he sympathized with Sherman Fairchild's stand and would permit his name to be entered on the opposing list of directors. He, too, was discharged at the meeting.

Three other corporation officials were solicited by the ten-member commit-tee of stockholders siding with Sherman Fairchild. They refused to join the opposition.

► **SEC Delay**—By the middle of last week, names of the other members of the anti-management candidates for directors had not been divulged, pend-ing approval by the Securities & Ex-change Commission of the material which the stockholders' committee in-tends to use in soliciting proxies for the meeting. Approval was expected late in the week and, with it, the announce-ment of the names of the nominees for directors.

The committee of stockholders con-sists of: Sherman Fairchild; Grover Loening; Mrs. Angela Beatrice, Bristol, Conn.; Edgar A. Eyre, a director of W. R. Grace & Co.; Luther M. W. Bolton, Washington, D. C., industrial consult-ant; Beckwith Havens, former Fairchild Planes distributor; Martin L. Glassman, president, Penny Parquet Coats, Inc.; Rene Planiol, electrical engineer; Alfred Spear, treasurer, Merchants Credit Corp., Providence, R. I.; and Raymond E. Massot, New York City.

► **"Boutelle Day"**?—Boutelle was fired after he expressed opposition to the re-tirement plan of J. Carlton Ward, Jr., corporation chairman. It was this issue that precipitated the fight by Sherman Fairchild, who says any pension plan

should be company-wide and not just for executives.

Hagerstown employees last week were to celebrate "Boutelle Day" to honor their general manager for his success in keeping the division at peak operation during the slack postwar days.

Colonial Strike Ends

A sudden Memorial Day weekend strike of 160 Colonial Airlines me-chanics, radio engineers, cargo loaders, clerks and cleaners ended last week. All were members of Air Transport Lodge No. 1165, International Assn. of Ma-chinists.

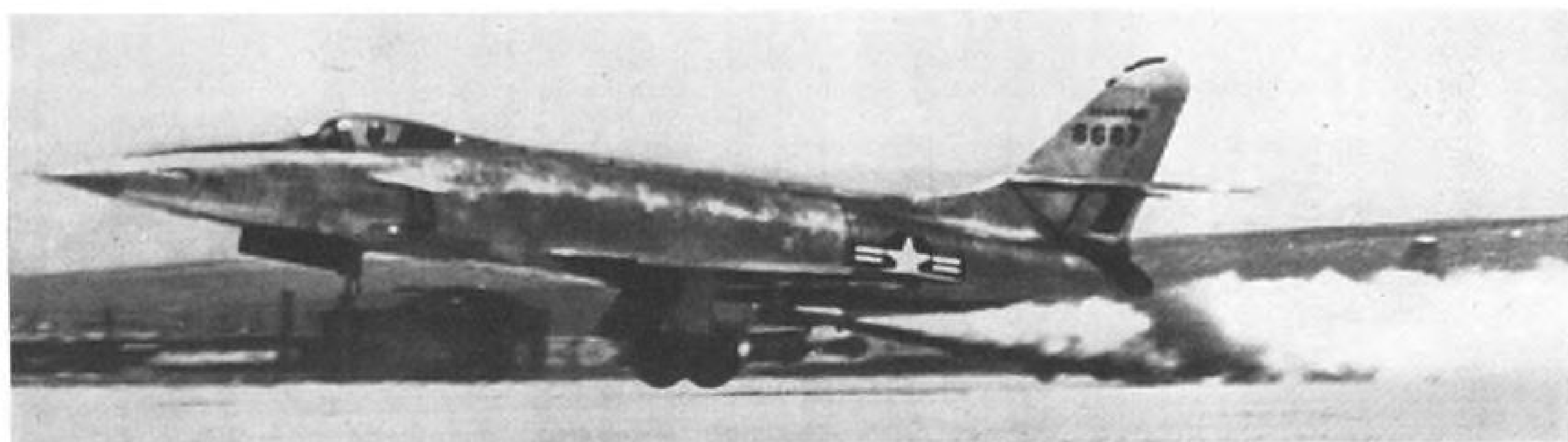
Issues at stake were wage increases of from 10-20 cents an hour; four addi-tional holidays a year; severance pay after 90 days employment. Terms of the settlement were not disclosed but Frank Tauss, lodge president, acknowl-edged the company had made satisfac-tory offers.

The strike, which began while Colo-nial was operating a peak holiday sched-ule, forced ten of the carrier's officials to handle baggage, cargo and engine checks at La Guardia Field so that serv-ice would not be interrupted. Among those who donned workclothes: Branch T. Dykes, vice president-operations; Alfred M. Hudson, Jr., vice president-advertising; Sigmund Janas, Jr., vice president-traffic; George R. Janas, acting chief pilot; William McTaggart, cargo director; and Jack Birch, stations super-visor.

Previous contract between the union and Colonial had expired May 1. Ne-gotiations for the new contract began Apr. 13.

Dykes informed AVIATION WEEK that before the strike began, "it had looked like negotiations on the new contract would be settled in a day or so."

Tauss claimed the men walked out after negotiations for settlement had bogged down.

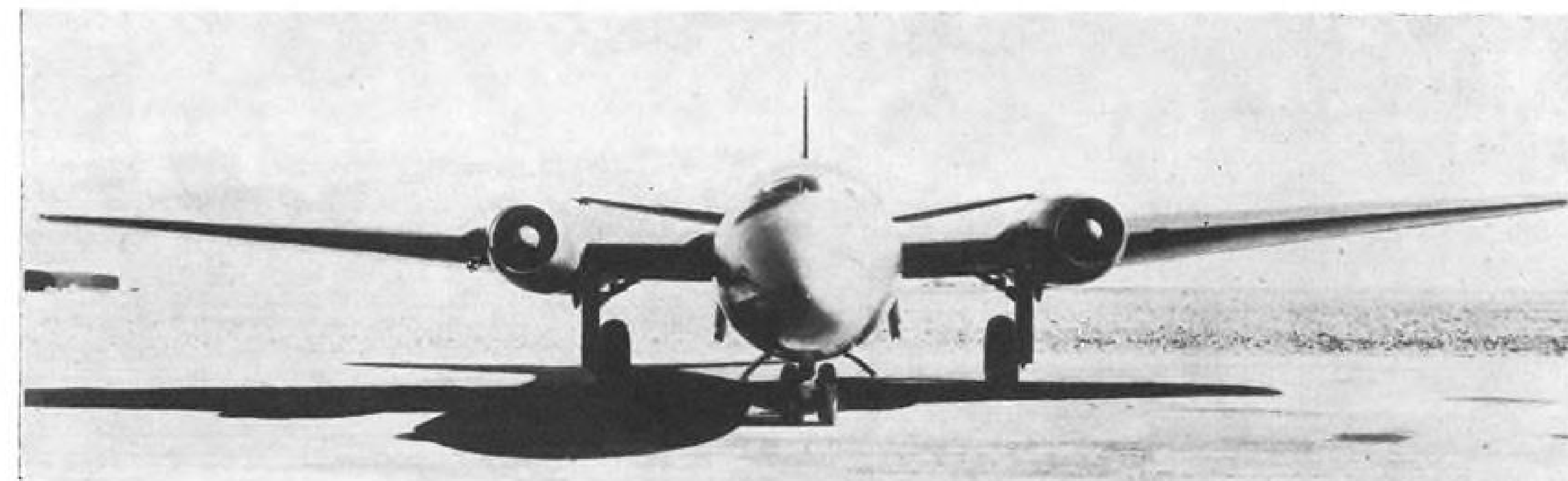


LEVIER AND JATO XF-90 OFF

Lockheed Aircraft Corp.'s penetration jet fighter, XF-90, takes off on first flight at Muroc AFB with test pilot Tony LeVier at controls. Plane's wheels were off the ground

under power of the two Westinghouse J-34 (3000 lb. thrust) engines, then LeVier let go the Jato bottles as a precautionary mea-sure to attain speed and altitude quickly

in case one engine went out. After a 37-minute flight, LeVier reported the plane's performance matched design estimates within speeds of 1 mph.



HEAD-ON VIEW OF BRITAIN'S FIRST JET BOMBER

Britain's twin-jet medium range bomber, the English Electric A.1, is shown on the ground at a British airfield. Powered by two

Rolls-Royce Avon turbojets mounted in the wing, the A.1 is expected to exceed 500 mph. Actual performance figures are secret.

Craft, which has been ordered into quan-tity production, made its first flight last month.



TURBOPROP TRANSPORT

Armstrong Whitworth's Apollo—first commercial transport designed especially for turboprop power—is shown in this new ground

photo. Craft is powered by four Armstrong Siddely Mamba II turboprops, will accommodate 31 passengers or 7500 lb. of freight

in its pressurized cabin. It is designed to cruise at 305 mph. at 20,000 ft. First flight was made in April.

SEC Reports Stock Transactions

Purchase of 2100 common shares of Bell Aircraft Corp. stock by the First York Corp., New York City, is reported by the Securities and Exchange Commission in its latest survey of major transactions covering mid-April to mid-May. The acquisition boosted the firm's holding in Bell to 152,544 common shares.

Other aviation transactions reported in the survey were:

- **Beech Aircraft Corp.**, sale of 2000 shares by Charles Yankey of Wichita, director, leaving a holding of 8500 shares.
- **Curtiss-Wright Corp.**, sale of 2000 common shares by Daniel M. Sheaffer of Philadelphia, director, leaving a holding of 10,600 shares.
- **National Airlines**, purchase of 1400 common shares by Joseph Merrick Jones of New Orleans, director, making a holding of 2400 shares.
- **Pan American Airways**, sale of 300 capital shares by Franklin Gledhill of New York City, director, leaving a holding of 4556 shares.
- **Piper Aircraft**, purchase of 100 preferred shares by William T. Piper, president, making a total holding of 9600 preferred shares and 166,276 common shares.
- **Reynolds Metals Co.**, purchase of 1000 common shares by the U. S. Foil Co. of Richmond, Va., making a total holding of 674,780 shares.
- **Sperry Corp.**, sale of 400 common shares by Thomas Doe of New York City, director, leaving a holding of 300 shares.
- **Timken Roller Bearing Co.**, sale of 400 common shares by Robert Brower of Canton, O., director, leaving a holding of 1000 shares.

- **Transcontinental & Western Air**, purchase of 100 common shares by E. O. Cocke of Kansas City, vice president, total holding.
- **United Air Lines**, purchase of 60 common shares by Samuel Martin of Chicago, secretary, making a total holding of 283 shares.
- **United Aircraft Corp.**, sale of 200 common shares by H. Mansfield Horner, president, leaving a holding of 1000 shares.
- **United Aircraft Products**, sale of 100 common shares by Ira Grishaver of New York City, director, leaving a holding of 2900 shares.
- **Western Air Lines**, sale of total holding of 5597 common shares by William Coulter of Los Angeles, director.

Officers and directors of aviation firms reporting stock holdings in their companies were:

- **American Airlines**: James Bruce, director, 1100 common shares.
- **Consolidated Vultee**: George Howard, director, 2000 common shares; Robert Watts, vice president, 554 common shares.
- **Curtiss-Wright**: Raymond Ward, assistant treasurer, 200 common shares.
- **TWA**: Noah Dietrich, director, 1000 common shares.
- **Warner Aircraft Corp.**: R. E. Secil, director, 800 common shares.
- **Western Air Lines**: I. W. Burnham, director, 500 common shares (plus an indirect investment through Burnham & Co., which holds 16,000 shares); L. Welch Pogue, director, 500 common shares.

Boeing Strike Illegal

Last year's five-month strike at Boeing Airplane Co.'s Seattle plant violated both the Taft-Hartley labor law and the no-strike clause in the union contract, according to a unanimous 3-0

decision of the U.S. Circuit Court of Appeals, handed down recently. This verdict upholds the position maintained by Boeing from the time the strike began in Apr. 1948.

It also upsets an order of the National Labor Relations Board, issued in November, which:

- Found Boeing guilty of refusing to bargain;
- Directed Boeing to bargain with the union—Aeronautical Mechanics Union, affiliated with the International Assn. of Machinists.
- Required the reinstatement of all strikers.

The court's decision came on an appeal taken by Boeing. NLRB plans to carry the case to the Supreme Court.

If it sticks, the decision opens the door for the Teamsters' Union, AFL, to challenge the bargaining rights of the Aero Mechanics. The Teamsters have been organizing Boeing shop workers through a new Seattle local. There has been no bargaining in the plant for the past year. The Aero Mechanics returned without a contract in mid-September.

Unless the Circuit Court is reversed, both the Aero Mechanics and the Teamsters are expected to try to establish themselves as bargaining agent for the approximately 15,000 production and maintenance employees through an NLRB election.

Following the decision Aero Mechanics filed a petition with the NLRB for a representative election, which could be held within two months if all parties concerned find themselves in agreement.

The present indication is that the Aero Mechanics, which has represented Boeing workers since they were first organized, has a majority of the workers at the plant.

Officials Named To Munitions Board

Frederick C. Crawford, president of Thompson Products, Inc., Cleveland, has been elected industry chairman of the Munitions Board Aircraft Industry Advisory Committee, which also serves as an advisory group to the National Security Resources Board.

Malcolm P. Ferguson, president Bendix Aviation Corp., is named chairman of a sub-committee to study sub-contracting relations in connection with industry mobilization. L. C. Goad, vice-president, General Motors Corp., heads another sub-committee studying security problems in individual plants.

Proposal to conduct "war games" among selected industry units to prove readiness for prompt expansion, was deferred. Another proposal for a detailed mobilization plan for component suppliers, will be studied by the group.

Maj. Gen. Patrick W. Timberlake, USAF, is Government Chairman. Donald F. Carpenter, Chairman of the Munitions Board, welcomed the members. Other members and alternates were: Lamotte Cohu, president, Consolidated Vultee Aircraft Corp., San Diego; J. H. Kindelberger, president, North American Aviation, Inc., Los Angeles; G. F. Titterton, Grumman Aircraft Engineering Corp., Bethpage, N. Y.; Harry T. Rowland, vice president (alternate for Glenn L. Martin, president), Glenn L. Martin Co., Baltimore, Md.; J. Carlton Ward, Jr., president, Fairchild Engine & Airplane Corp., Hagerstown, Md.; Thomas Knowles, Goodyear Aircraft Corp., Akron; C. C. Pearson, executive assistant to the president, Curtiss-Wright Corp., Wood Ridge, N. J.; H. M. Horner, president, United Aircraft Corp., E. Hartford, Conn.

Legal Snarl Halts Runway Lighting

Stop order on all new airport runway lighting projects in the federal aid program has been issued by CAA Airports Director Phillips Moore pending investigation by CAA legal counsel of Bartow lighting system patent claims.

Order was issued after the Welsbach Corp., Philadelphia, recent purchaser of the Bartow airport lighting system patents, sent telegrams to six city sponsors of airport lighting projects. The order said the telegrams sought to collect license charges of 80 cents a runway foot for each of the runway lighting projects. The charge, Moore pointed out, would amount to \$4000 for a single 5000 ft. runway.

He sent his stop order to all regional administrators instructing each to "stop

action immediately on all high and medium intensity runway lighting projects in your region until further notice." The order does not apply to projects already under construction or to taxi or obstruction lighting projects.

Legal problems created by the Welsbach license fee request are being studied by CAA legal counsel. They include: validity of the patents, whether CAA airport aid funds could be legally used to pay such claims, and possible scope of license claims. Next action in the matter is expected to come from the CAA legal office.

Welsbach acquisition of the Bartow patent rights was made Apr. 24, through an arrangement between J. B. Bartow, the inventor; Line Material Co., manufacturer of the lights; and Welsbach (AVIATION WEEK, Apr. 25).

CAA Funds Boosted By Senate Committee

Senate Appropriations Committee last week boosted Civil Aeronautics Administration's fiscal 1950 allocation for air navigation facilities by \$9 million.

Although expressing doubt that CAA would utilize more than the \$18,650,000 cash and \$18.3 million contract authorization allowed by the House, the Senate group added the \$9 million in contract authorization. CAA had requested \$50,150,000 for the airways program (\$23,650,000 cash and \$26.5 million contract authorization).

Senate group approved a CAA total appropriation of \$207,048,605 including \$139,248,605 in cash and \$67,800,000 in contract authorization.

Other changes made by the Senate committee in the House-approved 1950 fiscal year budgets for CAA and the Civil Aeronautics Board:

- **CAB funds** were increased by \$159,500—from the \$3,620,500 House figure to \$3,780,000. The Board would have to reduce its present staff by 31 under the House allocation. Original CAB appropriation request was \$3,980,000.
- **Washington National Airport** was recommended for \$175,000 (not submitted in time for House consideration) for construction, in addition to the \$21,500 approved by the House, making a total of \$196,500.
- **Airport monopolies** cannot be enforced by funds granted CAA. A proviso of the 1946 airport act prohibits airport sponsors from granting exclusive concessions for sale of aviation fuel and lubricants.
- **CAA allocations** for the next fiscal year approved by the House and the Senate Appropriations Committee are:
- **Air Navigation Development Board**, \$7 million (\$3 million cash and \$4 mil-

lion contract authorization). ANDB originally asked for \$10 million to begin development of all-weather airways and traffic control equipment, but later accepted \$7 million.

- **Airport development**, \$51 million (\$14.5 million cash and \$36.5 million contract authorization), a reduction of \$500,000 (for administration) in the \$15 million cash request of the Budget Bureau.
- **Alaskan airports**, \$5.8 million for international ports at Anchorage and Fairbanks—the amount requested by Budget Bureau.
- **Technical development**, \$1,450,000—a reduction of \$350,000 in the \$1,800,000 Budget Bureau estimate.
- **Washington National Airport**, \$1,250,000 for operation and maintenance—a reduction of \$50,000 in the \$1.3 million original CAA proposal.
- **Salaries and expenses**, \$94,402,105—a reduction of \$3,034,895 in the \$97,437,000 asked by Budget Bureau.

Chicago Air Show

Fly-by of all the latest U. S. Air Force tactical types, acrobatics by jet fighters and a large ground display of historic U. S., Japanese and German planes will feature the National Air Fair to be held at Chicago's Orchard Airport July 3 and 4.

The air fair is sponsored by the Air Force Assn. as part of its Third Annual Convention to be held in Chicago July 1-4.

Flight display will include a speed run by North American F-86A, current holder of the world speed record; appearance of a squadron of Convair B-36 bombers; acrobatics and simulated combat by Republic F-84 and Lockheed F-80 jet fighters and acrobatics by a Royal Canadian Air Force team flying de Havilland Vampire jet fighters.

Ground display will include captured German and Japanese equipment; historic USAF planes being presented to the National Air Museum; and National Advisory Committee for Aeronautics' exhibit "The theory of flight."

McGraw-Hill Buys 'Airport Directory'

McGraw-Hill Publishing Co. has acquired "The Airport Directory" from Haire Publishing Co., it was announced last week by Robert F. Boger, publisher of AVIATION WEEK.

Founded in 1932, the Directory is published annually and is the national authority on airport facilities for the entire nation. It was previously published by the magazine Airports and Air Carriers which has now been discontinued. Publication of the Directory will be continued by AVIATION WEEK.

FINANCIAL

Airlines Continue Debt Retirement

Through sinking funds and similar devices, carriers are improving their capital structures.

Despite the financial burdens of the airlines, they are managing to keep up debt retirement actions, which improve their capital structures.

This is being done through the operation of sinking funds and related amortization payments.

► **Capital Solving Problems**—An outstanding financial operation of this nature has recently been completed by Capital Airlines. Aided primarily by a retroactive mail pay award, the company was placed in a position to bring all sinking fund payments up to date.

Under the terms of the indenture securing its original \$10 million debentures, the carrier has been required every May 1 since 1947 to pay into a sinking fund for the retirement of the bonds an amount not to exceed \$500,000 annually, plus any sinking fund deficiencies or minus such credits of previous periods. Only \$150,000 of debentures were retired in this manner in the year 1947.

► **Now Current**—The retroactive mail pay award permitted the company to place the sinking fund on a current basis and to cure past deficiencies. A total of \$1,353,085 was paid to the trustee for this purpose on May 1, 1949.

Rather than attempt to purchase debentures on the open market, Capital elected to request tenders from the bondholders. In this manner, the advantage was definitely with the company as the bondholders were forced to guess the prices at which their debentures would be accepted. In effect, they were competing with one another, which resulted in restraining a strong upward market move in the face of impending known heavy requirements for retirement.

► **Retirement at Profit**—The net result of this operation permitted Capital to retire \$2,165,000 principal amount of debentures at a substantial discount with a cash outlay of only \$1,353,085, a gross profit of \$851,915 was realized in the transaction.

Of greater consequence, is the material over-all reduction in Capital's debt, and improvement in its capital structure. Outstanding debentures now aggregate but \$7,685,000. Further, the original \$4 million bank credit outstanding has now been reduced to \$2.5 million. As operations permit, it is

probable that this bank debt will continue to be reduced by additional payments.

As of Apr. 30, 1949, Capital revealed total current assets of \$5,456,530, with cash alone comprising \$3,111,961. Current liabilities, including the \$2.5 million bank debt, aggregated \$4,663,876, leaving a net working capital of \$792,654. In contrast, on Dec. 31, 1947, there was a negative working capital of \$201,021, plus \$3,665,000 of debt since removed.

► **UAL Action**—United Air Lines has been maintaining the regular schedule of debt retirement as provided under its various loan agreements. During 1948, this carrier drew down a total of \$28 million, payable in 20 quarterly installments of \$1,400,000 each. These repayments started Oct. 1, 1948 with a total of \$4,200,000 retired by the carrier since that time.

In addition, United sold \$12 million in 20 year 3½ percent debentures to two insurance companies. A sinking fund operation is also effective in this instance with \$120,000 paid toward this purpose during 1948 and another \$240,000 slated for retirement this year by the company.

► **TWA Adjusting**—Transcontinental & Western Air's fine operating results being achieved at the present time are, in large measure, being devoted to liquidate the problems of the financial policy of the past. These have been discussed in earlier issues of AVIATION WEEK.

► **Drop in Value**—Last year, the National Association of Insurance Commissioners placed a value of 60 cents on the dollar for TWA debentures in the hands of Equitable Life Assurance Society of the United States. At a recent meeting, a subcommittee of this association made a new appraisal and recommended that Equitable now carry these debentures at only 50 cents on the dollar.

The subcommittee's action will not become final until approval by the full association at the June meeting of the full association. In the past, however, such approval has been a formality.

As of Dec. 31, 1948, there were \$39 million of these TWA debentures outstanding. A sinking fund payment of \$1 million was scheduled for May 28, 1949, with another payment of the

same amount due Nov. 27, 1949. Even heavier sinking fund payments are required for 1950 and subsequent years, unless modified.

Ranking ahead of the Equitable debentures are secured notes issued to finance the major part of the carrier's aircraft.

On Dec. 31, 1948, there were more than \$17 million of such notes outstanding payable in 54 monthly installments.

These notes are now being retired on schedule and serve to improve TWA's equity in the aircraft securing these chattel notes.

► **Northwest Finances**—Northwest Airlines has yet to place its finances on a stable basis. After a delayed stockholder approval of a \$12 million credit to be advanced by the Reconstruction Finance Corp., the Civil Aeronautics Board has yet to give its required consent to this loan. If approved by the Board, the RFC loan will rank ahead of the \$9 million bank credit obtained by the carrier in April, 1947. Originally, a total of \$18 million was to be made available by the banks but they were able to take advantage of certain provisions and kept the amount down to \$9 million as of April 30, 1949.

If granted, the RFC loan will be repayable at the rate of \$1 million quarterly beginning July 1, 1950, and will be secured by a mortgage on all of Northwest's flight equipment and perhaps other assets of the line. It is probable that dividends on Northwest's preference stock will be permitted to be made only from current earnings. In the meantime, regardless of the ultimate terms of the pending RFC loan, the bank credit is to become payable in 20 equal quarterly payments, starting July 1, 1949.

► **American's Situation**—American Airlines, despite its \$40 million in debt, has remained undisturbed by sinking fund requirements in recent years. Its first payment of this nature is not due until June 1, 1951 when \$1,350,000 will become due. American, however, has the advantage of having its major financial problems behind it and the earnings generated should readily permit debt retirement as scheduled, if not on an accelerated basis.

The sinking fund principle is sound. As applied to past airline financing, it was intended that the heavy depreciation charges, in most instances, would generate sufficient cash balances to permit such sinking fund payments. However, this presumed that basic earning power would be more than adequate to cover the projected depreciation charges. This has not always happened and where operating losses proved to be a heavy cash drain instead, stringent financial conditions have resulted.

—Selig Altschul

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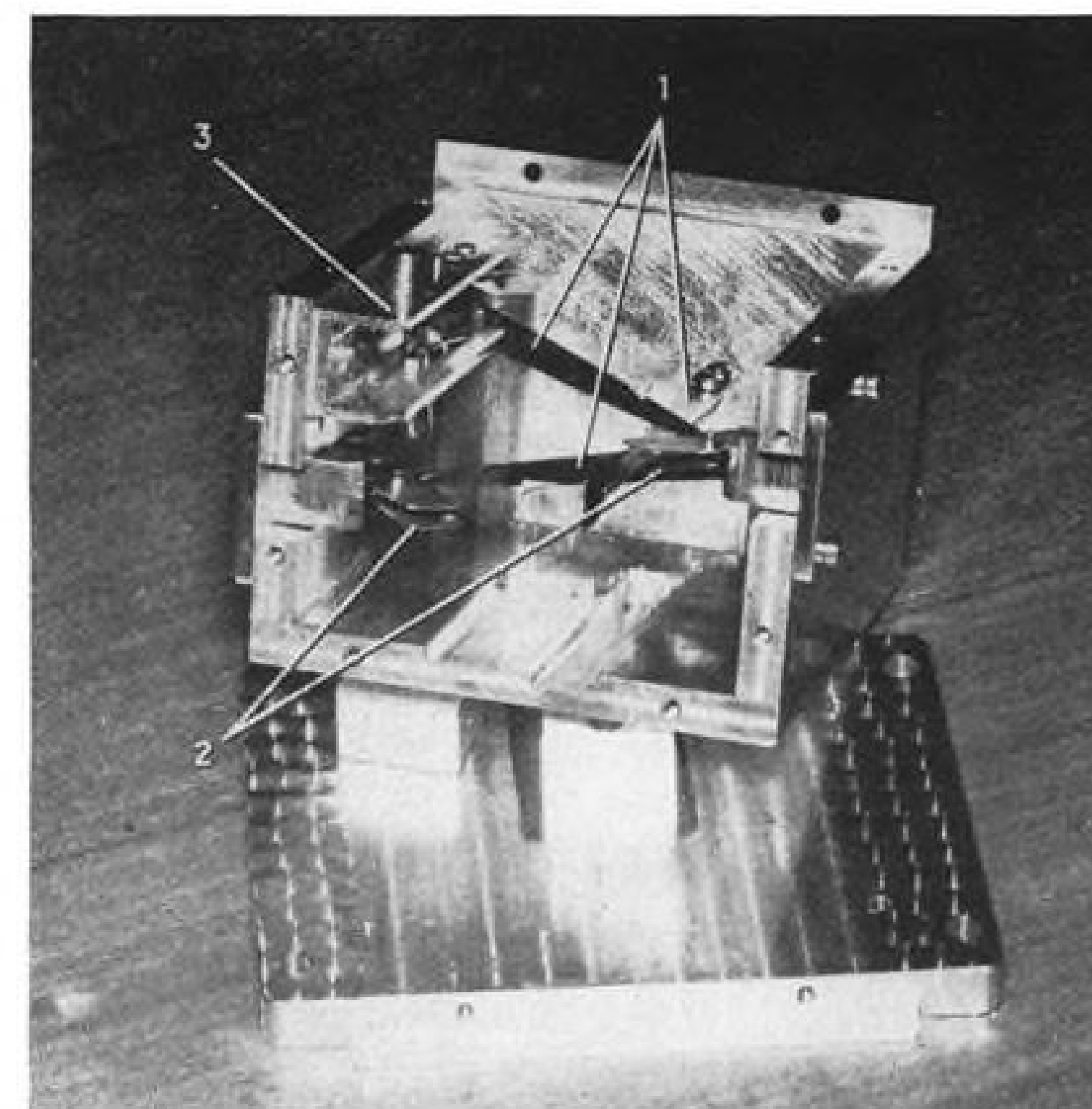
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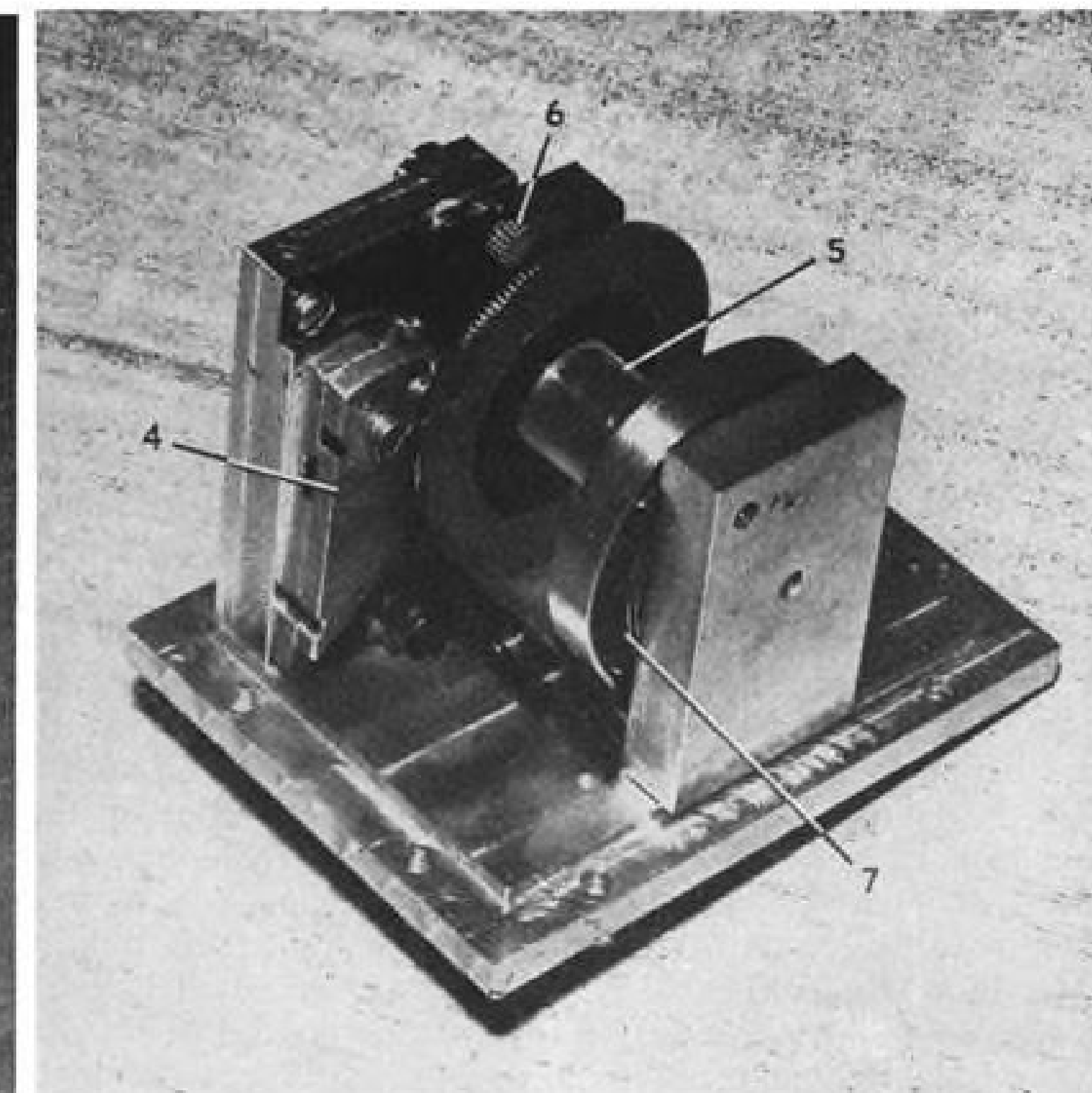
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ENGINEERING



COMPACT 24-lb. omnidirectional accelerometer, designed as accessory installation for operational aircraft, will give valuable G-time histories for crash studies. Components are: 1, Blades with record-



ing styli; 2, plate dashpots; 3, trigger mechanism; 4, escapement; 5, smoked or polished drum utilizing flanges and shaft for recording traces; 6, winding pinion; and 7, mainspring.

New Accelerometer Will Aid Crash Study

Navy research develops small, light, omnidirectional device as accessory for operational aircraft.

By Irving Stone

An omnidirectional accelerometer, a new development of the Special Devices Center, Office of Naval Research, promises to be a valuable contribution to aviation safety.

Specifically designed for analysis of operational aircraft accidents, the device not only records G forces, but also time of their duration. Experience gained from its use may well lead to re-evaluation of cockpit layout, seating and structure, to minimize crew injuries.

The unit is self-contained and requires no external power or maintenance. It weighs only 24 lb., can be enclosed in a 2½ x 2½ x 3-in. case.

► **Accidents Simulated**—In the past, attempts have been made to obtain data in "controlled" crashes. But this procedure has afforded information actually valid only under the particular conditions of the crash, and not necessarily representative of a field accident.

For this purpose, laboratory-type equipment has been used—heavy, bulky units, sensitive and delicate in makeup, requiring an external source of power

as well as considerable servicing.

Another type of device developed by the National Bureau of Standards for the Navy Bureau of Aeronautics is a ring dynamometer. This measures ring deformation and gives peak G only, with no time record.

► **Crash Study Desired**—BuAer and the Air Safety Committee of the Civil Aeronautics Administration are particularly interested in "freak" crashes: What happens when a plane is substantially demolished, yet all of the crew escape with little or no injuries? What occurs in an apparently minor crash where crew members sustain considerable injuries or there are fatalities?

It is expected that the new accelerometer will provide data to answer these questions by functioning as a regular accessory installation in a large number of aircraft, so that incidental crashes occurring during normal operation may be analyzed with respect to G-time histories.

Philosophy underlying the design is that since the aircraft moves in three planes, the device would have to be omnidirectional to be of value.

► **Blades, Dashpot**—The device incorporates three displacement blades placed at right angles to each other. These are cantilever beams with recording styli about two-thirds from the fixed end. Free end of each blade carries a paddle which moves in a dashpot.

Dashpots consist of two slightly curved metal plates mounted on bi-metal supports so as to cause the plates to approach one another as temperature decreases.

Several drops of silicon oil are held between the plates by capillary attraction, and when the accelerometer is fully assembled the paddles move within this film of oil.

► **Drum, Escapement**—The drum assembly employed consists of a mounting plate, bearing supports, recording drum, and escapement. The drum has three recording surfaces—the shaft and the two inner surfaces of the drum flanges.

The escapement is a ruggedly designed artillery fuse mechanism normally able to withstand as much as 20,000Gs. Its normal frequency is about 200 cps. It meshes with and controls the drum driven by a mainspring.

In cocking the mechanism, a winding pinion is pushed toward the recording drum until its gear meshes with the gear on the drum flange.

► **Triggering**—The trigger mechanism embodies two small weights mounted on a common axis so as to "guard" in all axes. Pulling either of the weights directly against its restraining wire will release the trigger. Deflecting the weight at right angles to its restraining wire will also operate the trigger.

Every mass, particularly those deliberately designed to respond to vibration or motion, has a characteristic frequency determined by the characteristics of the mass itself. Where this characteristic frequency falls within the normal range of operation over which the instrument is to function, some means must be taken to prevent the well-known "resonance" phenomena which would cause either premature or inaccurate operation of the device.

A trigger designed for control of an accelerometer might be prematurely released by small amplitude vibration at a high frequency. Since this condition would not be one causing structural damage or injury to personnel, it is not a criteria for correct triggering.

► **13Gs Plus Displacement**—To prevent this type of faulty operation, the trigger has been designed not as a pure accelerometer but as a combination accelerometer-displacement device. This has been accomplished by requiring the trigger to accumulate at least .06 in. actual displacement before it will release the recording drum.

A triggering level of 13Gs must be combined with this structural displacement of at least .06 in. before the trigger will release for recording.

Naval aircraft are structurally capable of withstanding forces up to 12Gs, and it is not at all uncommon for 6Gs to be registered in a normal carrier landing.

Forces as high as 250Gs will be recorded for periods up to a maximum of 4 sec. It has been found that the significant part of all aircraft accidents last somewhere between 2 and 4 sec.

► **Location Data**—Ideal location for carrying the accelerometer would be "subcutaneously" on the pilot, but this, is of course, impossible.

Next best place, theoretically, would be by an attachment to the body but this would probably give rise to an undesirable physiological factor.

Hence, the practical location would be at the last member to transmit forces to the pilot, such as at the seat belt attachment to the seat.

Though not yet installed on any Navy aircraft, the device is now in at the National Bureau of Standards for calibration and verification of characteristics.

Considerable interest has been exhibited in the development by the CAA and the Australian and British governments. The U.S. Air Force has requested purchase or loan of the accelerometer.

Better Lightplane Design Asked

Engineering improvements known and tested could be incorporated by manufacturers of existing planes.

By Grover Loening*

During the past year, the National Advisory Committee for Aeronautics has been giving increasing attention to what research is needed for the extension of personal plane development in this country.

After 40 yr. of more or less intimate association with aviation, and in particular in the early days with the development of the airplane for the individual use of the public at large, I must present one conclusion that is not too palatable—and that is, an understandable tendency for the promoters of this field, including myself in the earlier days, to believe too readily what our high-pressure public relations workers presented to the public from their fertile and talented imaginations.

Enthusiasm and belief in our future are most commendable, but the engineers are particularly the ones who must take these presentations with a grain of salt and not also be swept into believing that everything is all right.

► **Production Statistics**—Everything in private personal aviation is not all right at all, as so cruelly evidenced by the production statistics relating to the private aircraft market. Here are the facts. Let us look at them bravely and then proceed to do something.

In 1946, some 33,000 personal planes were produced; in 1947, this fell abruptly to 16,000; in 1948, it dropped to 6900; and, in 1949, according to first quarter figures, the production will barely reach 3000.

Financial total involved was a \$92,000,000 a year business in 1946, which in 1949 will barely exceed \$9,000,000 according to the present rate.

Were this halving process each year to continue, we would end up in 1952 with a production of 400 planes, at a probable total of less than \$2,000,000.

At the present time there are over 90,000 planes registered in the U.S. This is an enormous total, but the realist must at once inquire, "How much do they fly?" Nearest estimate that can be obtained is that about 50 percent of these, the strictly personal planes, flew an average of only about 60 hr. each last year, which means that many hundreds or thousands of them merely sat

on fields waiting for something to happen.

► **In 15-yr. Period**—Meanwhile the development along old standard lines of superbly enough built planes—like the Navions, the Bonanzas, the Cessnas, Pipers, and Luscombes, to name just a few—continues to deliver plane types very much as we have known them for the past 15 yr., but much more beautifully built.

In a hard-headed comparison, however, of the 1934 Fairchild F-24 four-seater, for example, and a Beech Bonanza of today, we find that in 15 yr. we have made convincing progress in construction details, in beauty of workmanship, in the reliability of a product that will permit an Odom to fly 5000 mi. non-stop.

But we cannot land in a smaller field, we cannot take off in a shorter distance, we cannot fly in thicker weather, we cannot train a person to fly in a shorter time, and the whole process of first cost and of maintenance is three or four times as expensive.

Chief result is an increase in speed of about 30 or 40 mph., in 15 yr.

► **Utility Categories**—Now, to be sure, this has its use. Looking over the field today, we find the real sound utility of today's personal planes is chiefly in two categories.

The executive business use is convincingly convenient, fast and therefore worthwhile, but, as evidenced by the production figures, only in a very limited market.

A new development has entered the field with also a convincingly sound reason that will last—and that is the development of the flying farmers' use of aircraft, not nearly so much for transport, as for the highly utilitarian purposes of sowing seed, spraying insecticides, farm and cattle inspection, and the like.

However, let us not fool ourselves. The use of aircraft as a vehicle to rival even in a small way, or to supplement the use of, an automobile, is so far from realization at this late date in aircraft development that we would be indeed fatuous and over-pleased with ourselves if we did not realize that we are allowing the opportunity to create a vast new industry to slip by because of a surprising complacency (coupled with a financial stringency, to be sure).

► **NACA Cooperation**—The NACA, of necessity in the present Government organizational and development work, is chiefly engaged in research that has

to do with military aircraft development and advancement.

The recent award of the Collier Trophy, for the first supersonic flight, to the combined team of the manufacturer who built the X-1, the Air Force who flew it, and the NACA staff whose research gave the foundation for the design, is an outstanding example of cooperation.

But the NACA very frankly have been aware that such a condition does not exist in the development of new personal planes.

In the past year, for example, there have been only two or three instances in which personal aircraft manufacturers have bothered the NACA personnel, as they have a right to do and have been so often invited to do, with technical development problems.

More than that, we find that much that can be done to improve greatly the utilization of personal aircraft by incorporation of known new developments is rarely done. One of the very few recent instances, is the work now in progress of development by Lynn Bollinger and Otto Koppen in Boston.

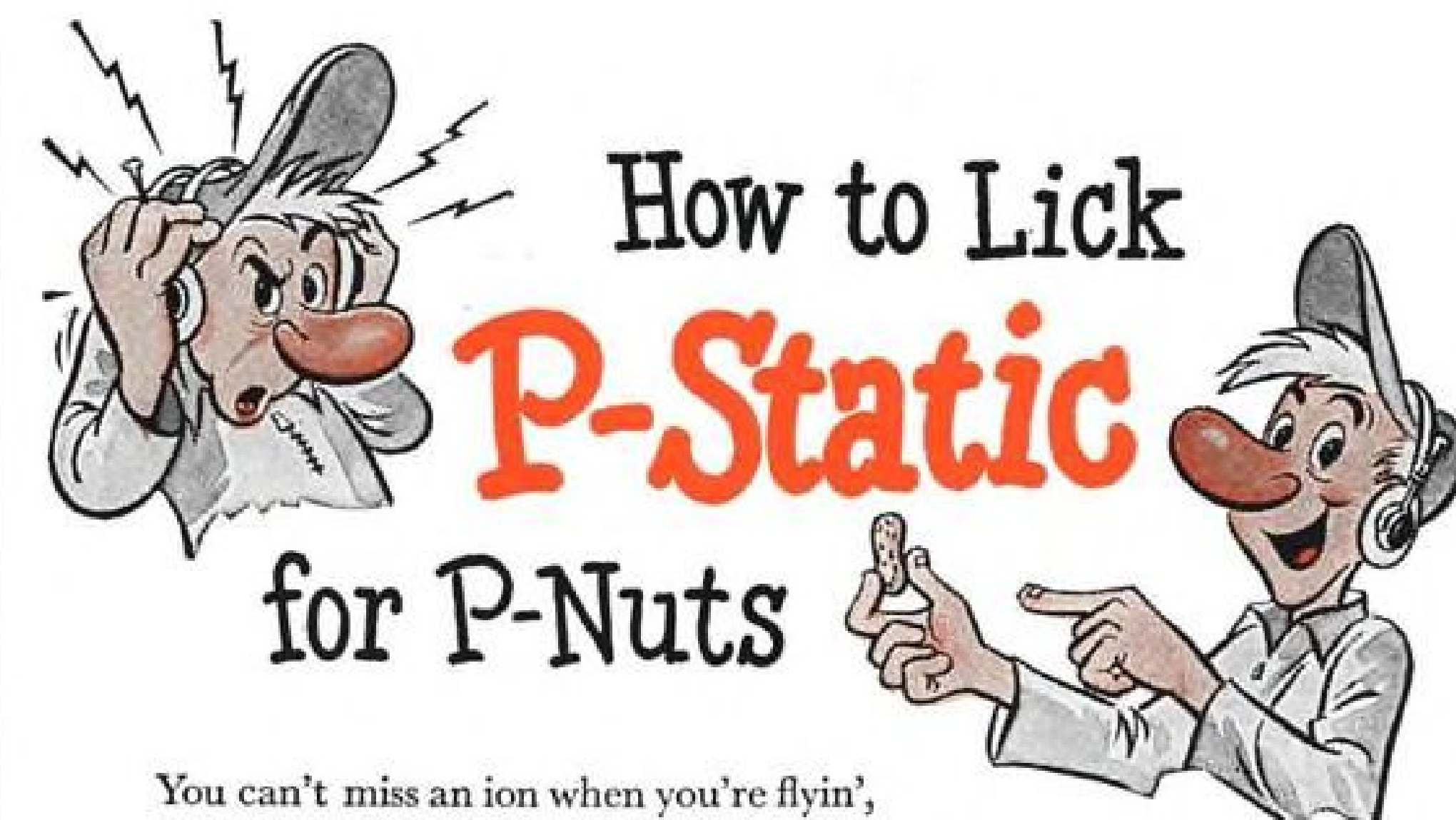
Whether financial stringency in this field or a lack of engineering development ambition, or both, are responsible for so much apathy, is difficult to appraise, but since the NACA is charged with supplying knowledge for improvement in the development of American aircraft, its laboratories continue to sandwich in, wherever possible, new research that would extend the use of personal aircraft.

The experiences, not only of myself but of quite a large number of personal plane users who have been contacted, as to why our utilization of personal plane flying was decreased so discouragingly, could be summarized about as follows:

► **Airports Remote**—Planes actually do not go where the individual really wants to go—landings are made almost always at more or less remote airports. A car or a bus must be taken to the destination. The destination is generally in town for shopping or business, or at a country club for golf, or at a beach, or at a friend's country place.

To meet the requirement of actually ending up at where one really wants to go, as is done so conveniently in the automobile, means almost vertical landing or takeoff. The more nearly this is approached, more places one can go.

► **Slow Landing Speeds**—If instead of having the airport landing types that we have today, we were to have planes that could land under 30 mph. and take off in a couple of hundred feet over a 50-ft. obstacle, we could meet many of the requirements even to landing in a city or in town, a roof top or landing strip.



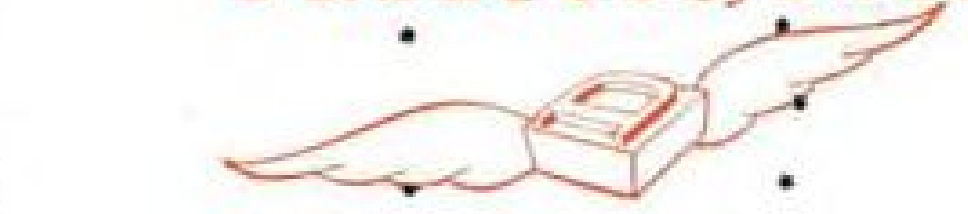
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* Consultant, National Advisory Committee for Aeronautics. Abstract from his paper delivered before the recent Second International Conference, Institute of the Aeronautical Sciences and the Royal Aeronautical Society, New York.

To land under 30 mph. needs only three times the lift coefficient of the existing planes that land at 50. NACA has studied several wing sections and high lift devices, which coupled with boundary layer control, would enable a high lift of this character.

Some of these devices have been known for years. Some are used daily in the Armed Services—but not a single certified commercial plane today has incorporated in it any more than the most elementary such features.

► **Wing Modifications**—It is further of interest that recent Langley research on high lift wing sections has been extended, particularly in low drag type

airfoils, to the lower Reynolds Number range of three to six million, suitable to personal aircraft speed ranges and size.

Very interesting results have been obtained which clearly demonstrate that existing wing sections on personal planes can be modified quite easily to give higher speed than now obtained for the same power and higher lift at greatly reduced landing speed.

At the Langley laboratory, a Cessna high wing airplane is being fitted with various wing configurations to study improvement of takeoff and landing characteristics. Boundary layer control will actually be installed in connection with high lift flaps.

Research directed toward increasing useful lift for personal owner type aircraft is also being sponsored by the NACA at the Texas A & M Personal Aircraft Research Center, under the direction of Fred Weick.

► **Bad Weather Problem**—Next in our order of difficulties is the inability to fly in bad weather, bringing with it uncertainty as to making a schedule. This, in turn means that the owner cannot plan on a definite weekend with any degree of assurance, because if he runs into foul weather his plans go awry.

This tough problem is one that, of course, airlines also are up against, but one of the means of solution at hand is to endow aircraft with complete maneuverability as a vehicle. This essentially means that they must be endowed with the ability to stop in the air and back up. A helicopter, of course, can do this, but unfortunately, due to its present stability insufficiency, existing copters are very difficult to fly in blind conditions.

This problem of visibility is by no means a hopeless one. Radar solutions are at hand to enable the pilot to see what he is up against, and endowing the copter with stability is particularly a research problem on which NACA is busily engaged.

► **Noise Factor**—A further limitation to wide use of aircraft is that it makes altogether too much noise. This, too, has been under research by NACA. Two years ago a very convincing demonstration of a silenced airplane was given at the Langley laboratory, and research has greatly extended this achievement.

A fundamental study of different muffler types has been made with a laboratory setup, with controlled conditions of noise frequency and amplitude.

A special contract has been entered into, and is currently in process of being completed with the Aeronautical Research Foundation of Boston, to further study and simplify solutions for noise abatement. This NACA-sponsored research has already resulted in some extremely promising conclusions, indicating that private plane takeoff noise of close-in flying can be reduced to an acceptable level about which no community could reasonably complain.

But the application of this to existing new certified personal aircraft production is lagging noticeably. Keen interest therein is being displayed hesitatingly and there is much shrugging of the shoulders and dismissing of this feature as too costly.

Is it too costly, when public acceptance is likely to greatly increase the market for orders, chiefly because close-in landing strips would be tolerated?

► **Fool-Proof Features**—Flying charac-

teristics of personal planes are not yet entirely fool-proof, particularly as to spinning and spiral instability. Research and development concerned with design features to avoid spinning characteristics has been extensively done by NACA, and industry has used much of the data—largely because of the CAA's strict requirements.

With the knowledge now available on this subject, there is no excuse whatever for a new design of plane to be a bad spinner. If it is, NACA has developed research procedure which would quickly cure it.

Spiral instability, a very serious item to the private flyer when he tries to fly his plane in an overcast, is now the subject of current investigation. Some results have already been obtained by flight test at Langley Field, indicating that friction on aileron or rudder control systems can produce a condition of divergence when controls are free that may appear to the pilot to be a spiral instability which actually is not present.

Further research on controls now includes flight investigation of interconnected aileron and rudder control in order to explore further a two-control operation to simplify flying.

An additional element of control study currently being made is to provide the airplane which has high lift devices to slow it down, with sufficient control forces (both as to aileron and tail) to enable it to be flown in this slow regime with adequate safety.

For example, spoilers have been developed which give adequate lateral control in company with full span flaps and ailerons. And studies have been made of boundary layer application to give control forces on surfaces subjected to very low speed air flow.

► **Undercarriage**—The landing gear of personal aircraft now has two further developments that could greatly extend utilization.

First is the crosswind landing ability afforded by castering wheels. CAA has given a great impetus to this development, and NACA tests indicate its entire practicability towards giving aircraft the ability to land crosswind on one-way fields and to take off with no penalty at all.

The second feature, not yet much developed but in the analysis stage, is one that would accompany the use of high lift devices—a gear of long stroke that would allow landing a slow high lift configuration at high angle of attack on its glide path with no flare at all. Skill required for landing and room for landing would be reduced greatly.

► **Cost Objection**—All these features are indicated developments that could be incorporated from research now completed or in progress. There would re-

sult, a personal plane that could be operated with much greater scope as to where one could go, much greater assurance of regularity, and less noise. It would be easier to fly, safer to land in unprepared close-in areas under more difficult wind and weather conditions.

Much of the industry's hesitancy in regard to incorporation of the results of such research stems from the added cost involved. It is held that the added cost would kill the market.

It is to be noted, however, that few have tried to meet this market. There are many new customers not in the least interested in the presently certified personal aircraft who would find an aircraft incorporating such features as the above of great interest, because of the totally new fields of utilization that are opened up.

► **No Speed Sacrifice**—A very important point, however, must always be kept in mind—the plane must not be slowed down in its cruising speed by virtue of endowing it with these new features. Because history has shown (and continues to show in the hesitant and limited acceptance of the helicopter) that an important personal deterrent in using aircraft in lieu of other vehicles is that they are lacking in high speeds.

Even the existing speed of 150 mph. cruising of our excellent Bonanza,

Navion and other types is not enough. The private owner really wants a noiseless, easy-to-fly, four-seater craft that will fly from zero to 200 mph.

Of course this will cost money, and at the beginning the market will be limited. But we have all experienced these obstacles in early aircraft development. This mania for selling aircraft only because they are cheap and not because they can give a result that we can use, is—at least in my opinion—a completely false path to progress.

► **"Helioplane"**—It is encouraging to note that the recent announcement of the development of their experimental personal plane by Koppen and Bollinger is one of the first successful efforts to incorporate many of the above desirable features. The "Helioplane," as they call their new aircraft, can take off in the same or even less distance than it can land.

This is in contrast to the much earlier Curtiss "Tanager," Guggenheim Trophy winner of about 20 yr. ago, which required three times the landing roll distance to take off.

The Koppen-Bollinger plane in its tests to date has taken off in 100 ft. in a calm and climbed over a 50-ft. obstacle in 200 ft. more distance. It can land on the same slope in reverse at about 30 mph. And while doing this, the noise is entirely acceptable because



THERE'S A PLACE FOR EVERYTHING

Maintenance "turn-around" time for Aer Lingus planes at Northolt Airport, London, England, is claimed to have been cut 25-50 percent with the help of this mobile servicing unit built out of scrap parts for less than \$40. Designed by D. J. Stapleton, Aer Lingus station engineer, mobile workshop is equipped with generator power unit, elec-

trical plug outlets, portable lamps, work bench and vice, rack with all essential tools, drawers containing sparkplugs and other necessary spares, fire extinguishers, first aid kit, containers for hydraulic and de-icer fluids, and full range of measures and funnels. Top of unit supports crewman for maintenance work on powerplant.

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of a geared-down, large-diameter, slow-speed-efficient thrust propeller of low tip speed, combined with effective and remarkable light mufflers.

The important requirement of slow landing and high lift on takeoff are accomplished by incorporating full span flaps and leading edge automatically opening slots.

Necessary control for this slow speed condition is enhanced by a novel split rudder. Undercarriage has castering wheels for crosswind landing.

Here, then, is a most praiseworthy beginning.

Let us continue the development to the utmost that our present scientific knowledge and research would permit us to devise, and then as its utility is amply demonstrated, the snowball starts—more orders giving more production, allowing cheaper prices, leading to still more production.

► **Versatile Craft**—We have seen conspicuous development, by Fulton and others in the roadable airplane, of features which add a practical utility.

We are seeing the helicopter develop before our eyes, and if we can only endow it with more speed and greater stability it will begin to grow even though its cost is high.

We come to the consideration of the really versatile aircraft that can hover, land vertically, take off and fly 200 mph. or more. Solutions for this are under study; for example, the process of using rotors for direct lift to be gradually turned into propellers for flight.

In a recent presentation, Ralph Barnaby and his associates presented an intriguing study of what they call convertible aircraft. "Convertible" does not seem quite right, since what we are after is really a complete aircraft that can fly both vertically and horizontally.

One of the most intriguing research problems in this field has to do with the application of jet engines, in such a way that their enormous air flow movement will induce a high lift on wings for landing and takeoff, which can be diverted into thrust alone for very high speed horizontal flight.

Fortunately these developments, at the moment, are not the orphans that they were, because the Services are finding difficulties that high direct lift configurations would do much to solve.

The Air Force is burdened with fighter planes that go so fast that they can't maneuver in turns for training guns on targets quick enough to be effective. Yet if those same planes were given an enormous increase of lift on their heavily loaded wings for maneuvering purposes they could be turned in a sufficiently short radius. And the Navy Air Arm both for carrier usage and for water-borne aircraft desperately needs

to get away from the high speeds of take-off and landing that the fast planes of today are so patently cursed with.

In general, therefore, we are facing the closing of gaps in aircraft research which are applicable to both military and civilian usages—the gap from 100 down to 0 mph. and also the gap of endowing planes with maneuverability as a vehicle that will allow it to stop in the air, back up, "change its mind," or proceed at high speed, and thus remove "from about its neck" the devastating real estate requirement of airports that has weighed so heavily on practical aircraft utilization.

We have in NACA laboratories the facilities and know-how to provide the basic information for an air vehicle widely useful to individuals.

Index of Translated Technical Papers

Plans to publish a new accession list of air-technical translations have been announced by the Central Air Documents Office, Wright Field, Dayton, Ohio.

List will be distributed in loose-leaf form and will index about 3500 translations including 2300 already listed in Dec., 1948 edition. Inserts cataloging newly acquired translations will be made at regular intervals.

Like current list, new index not only will serve as supplement to "Card Index of Captured Air-Technical Documents" and the "Desk Catalog of German and Japanese Air-Technical Documents," but may be used alone as an index to translated foreign air-technical documents. It will cover about six foreign countries.

Standard Aeronautical Indexing System breakdown will be used in arranging translations, which will be listed alphabetically by author under pertinent SAIS subject section.

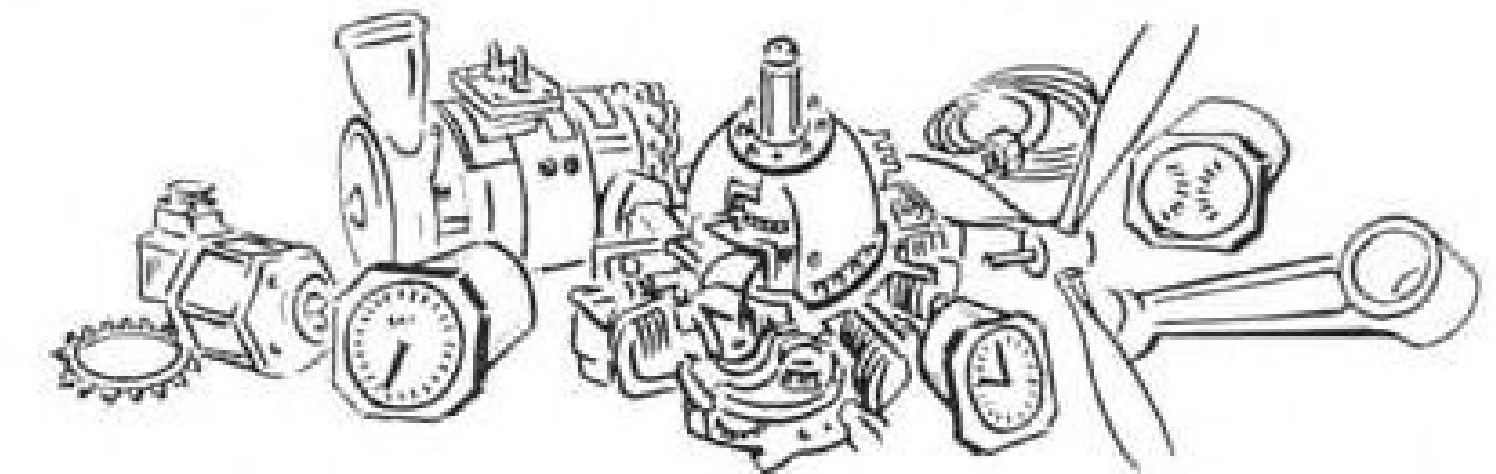
Information will include English and foreign titles and other essential cataloging data. There will be no abstracts. Highest security classification will be "restricted."

Most of actual translations may be obtained from CADO and are available to agencies and contractors of the Armed Forces and to organizations participating in aeronautical phases of the National Research and Development Program.

CADO and its predecessor, Air Documents Division, have issued translation accession lists before. However, new index with its loose leaf feature, is expected to provide greatest coverage of translations available in aeronautics and allied fields so far.

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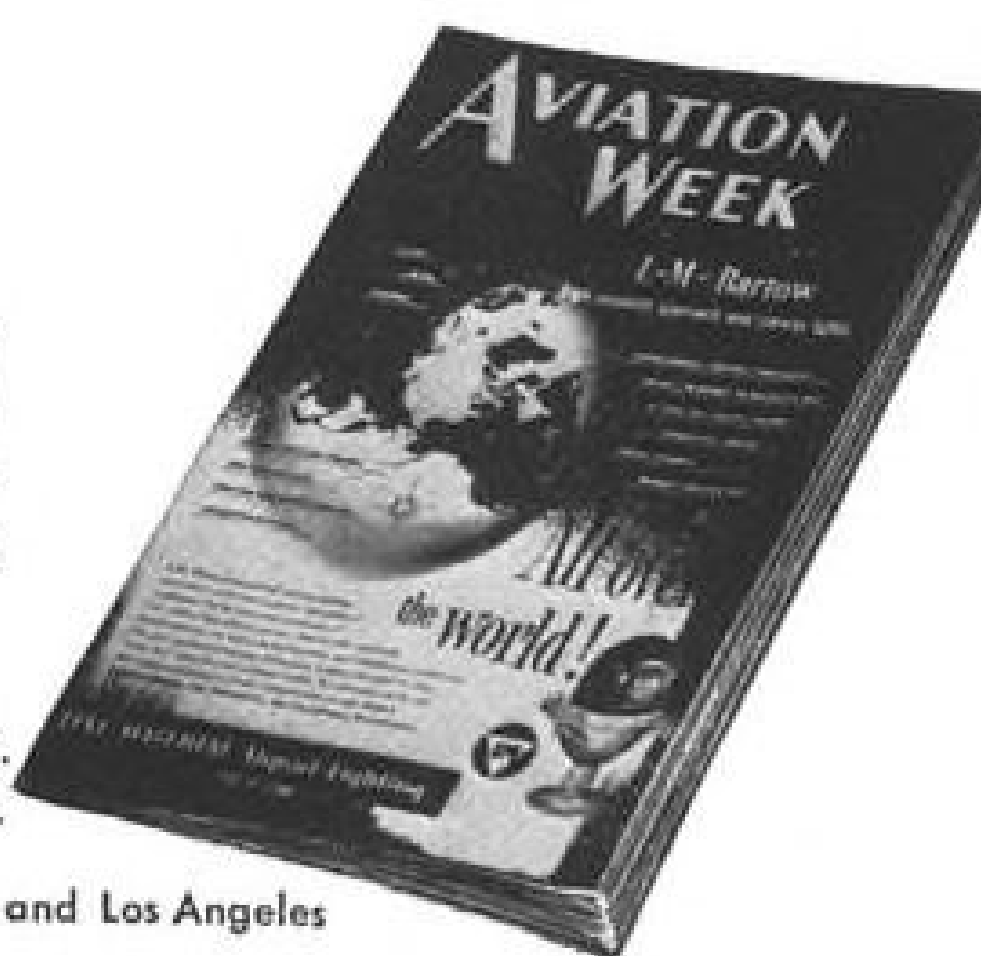
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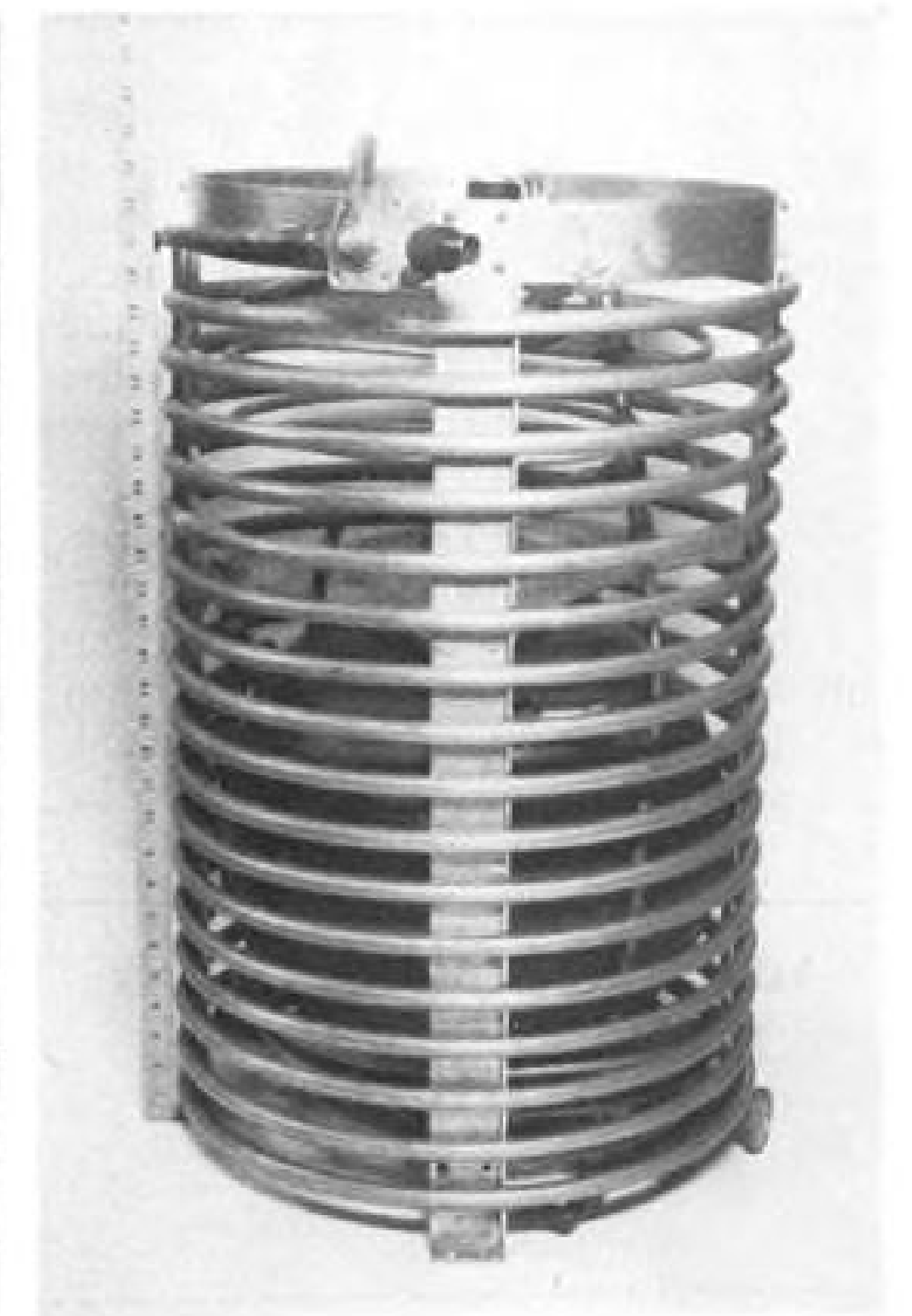
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OLD vs. NEW: Left photo shows large pile of gaseous oxygen supply tanks formerly required for B-17 crew in contrast to compact Bendix version of liquid oxygen converter seen alongside. Original converter developed by National Bureau of Standards is shown at right.



Oxygen Converter Saves Space, Weight

One 30-in. × 18-in. diameter unit weighing 60 lb. does job of many tanks requiring considerably more room.

Equipment engineers are getting an assist from the National Bureau of Standards.

Faced with severe limitations of space and weight in high-flying military craft, they can now consider use of a compact, relatively light, fully automatic, liquid-oxygen converter in place of a large and heavy bottle-oxygen supply.

Converters built on the NBS design by commercial manufacturers are reported to have operated in Navy and Air Force flight tests up to 40,000 ft.

► **Conserves Space, Weight**—Developed by NBS engineers in cooperation with the Navy Bureau of Aeronautics, the new unit requires no source of power, measures less than 30 in. in height and is only 18 in. in diameter.

It weighs 60 lb., holds 62 lb. of oxygen—enough for 10 men for 10 hr. This same quantity of oxygen, supplied from gas cylinders at 1800 psi., would require 21 tanks, each 514 cu. in., weighing a total of 350 lb. empty.

Based on the NBS design, a converter built by Eclipse Pioneer division of Bendix Aviation Corp. is under test in a B-17 by the Air Materiel Command. The bottle-oxygen supply for the craft weighs slightly over 400 lb. fully charged, while the new type weighs 130 lb. There is an 80-percent saving in space, and volume of oxygen available is

increased 44 percent.

► **How Unit Functions**—The NBS converter consists of a standard 25-liter (6.6 gal.) metal Dewar flask modified by addition of a bottom drain, together with two coils, one for pressure build-up, other for warming gas as delivered.

When oxygen gas pressure is to be built up, a valve is opened, allowing the liquid to flow through a drain tube and trap at the flask bottom and into the build-up coil, where it is evaporated and warmed by the atmosphere.

The warm gas rises through the coil by thermal convection until it enters the top of the flask, where it mixes with the gas above the liquid. Here some of the gas condenses on the liquid surface but this is immediately replaced by freshly warmed gas and the cycle continues, gas pressure rising quickly.

Once pressure is established, gas may be withdrawn by forcing liquid through the bottom drain into the withdrawal coil, where it is evaporated and warmed by the atmosphere as it passes to the outlet mechanism.

► **Pressure Controlled**—Excessive rise in pressure is prevented by closing of an automatic bellow-type valve in the build-up coil, which stops the flow of additional gas to the top of the flask. At higher pressures resulting from heat transmission into the system when it is not operating, another pressure-actuated

valve vents gas directly from the top of the converter to the delivery coil.

When this circuit is open, any withdrawal of gas drops the pressure quickly to operating values. A pressure relief valve is provided, in the build-up tube and in the delivery line.

For flows up to 150 liters per min. (5 cu. ft./min.), gas is delivered within 5 deg. C. of atmospheric temperature. Flow rates over 10 times as great, but the delivered gas is colder.

Pressure may be built up, when the container is full, from 0 to 65 psi. in 10 sec. The flask is somewhat stronger than the standard Dewar flask and will withstand 200 psi. internally.

Pressure achieved is quite stable, and although it drops with vigorous shaking, recovery is almost instantaneous.

Depth of the liquid in the container is measured by a differential bellows-type manometer connected between bottom drain and top of flask neck.

► **Withstands Tests**—To permit the converter to operate in an inverted position, a gravity circuit is provided. This consists of a line from the top of the flask neck to the bottom of the delivery coil. It has a gravity-controlled valve which opens when apparatus is inverted.

The converter has successfully withstood tests at the Bureau and other Government laboratories under conditions of severe vibration. (3000 cycle per min.), rapid acceleration (nine times the acceleration of gravity), severe cold (−40 C.), and severe heat (75 C.). Performance at tilts up to 45 deg. was

not materially different from that observed in the erect position.

When the apparatus was inverted, pressure rose somewhat more rapidly because of the shorter heat path from the atmosphere to the liquid in the neck, but in 5-min. runs the pressure rise was not generally sufficient to open the relief valve.

► **Air Force Trailer Plant**—The Air Materiel Command is using a mobile oxygen liquification plant that can be contained in a trailer-truck. The trailer can be parked on a corner of the flying field, and with a storage tank, will fill the needs of planes.

For use at remote bases where oxygen manufacturing equipment would not be practical, huge storage tanks are being designed that will hold as much as 1700 gal. of the liquid. Transports of the C-74 type will carry one of these tanks. To transport an equal amount of oxygen in the gaseous form would require $4\frac{1}{2}$ times the space and about an 80-percent increase in weight because of the number of containers.

The mobile unit can produce liquid oxygen at the rate of 80 lb./hr., 1 gal. weighing about $9\frac{1}{2}$ lb. Each trailer has its own powerplant, air compressor, air purifier, refrigeration unit and air separator group. The powerplant group

furnishes all mechanical power for the air compressor and the refrigeration units as well as electricity for the air purifier, air separator and the 115v. lighting system.

Precision Counter Measures Shaft-Rpm.

A new speed-measuring instrument has been developed by General Electric Co., Schenectady, N. Y.

Designed to measure speed of rotating shafts, device is accurate to one part in 15,000. Once every second it flashes the shaft's speed during the past second on a frosted glass screen.

Known as a "precision counter tachometer," the instrument consists primarily of a small a.c. generator connected to shaft being checked.

The faster the generator is turned, higher the frequency of the current it generates. By measuring frequency electronically over a controlled time interval, engineers have been able to gage shaft speed with extreme accuracy.

Shaft rpm. reading is flashed on a screen by means of short telescopes controlled by electronic circuits connected to generator. Each telescopic tube incorporates a light, and a number which is projected on screen when light is turned on. Certain of the telescopes light up every second to indicate shaft speeds up to six figures.

New Servicing Dock

Routine mechanical checks on Navy's Douglas R5Ds have been cut in half at the Naval Air Station, Patuxent River, Md., by a new type maintenance dock.

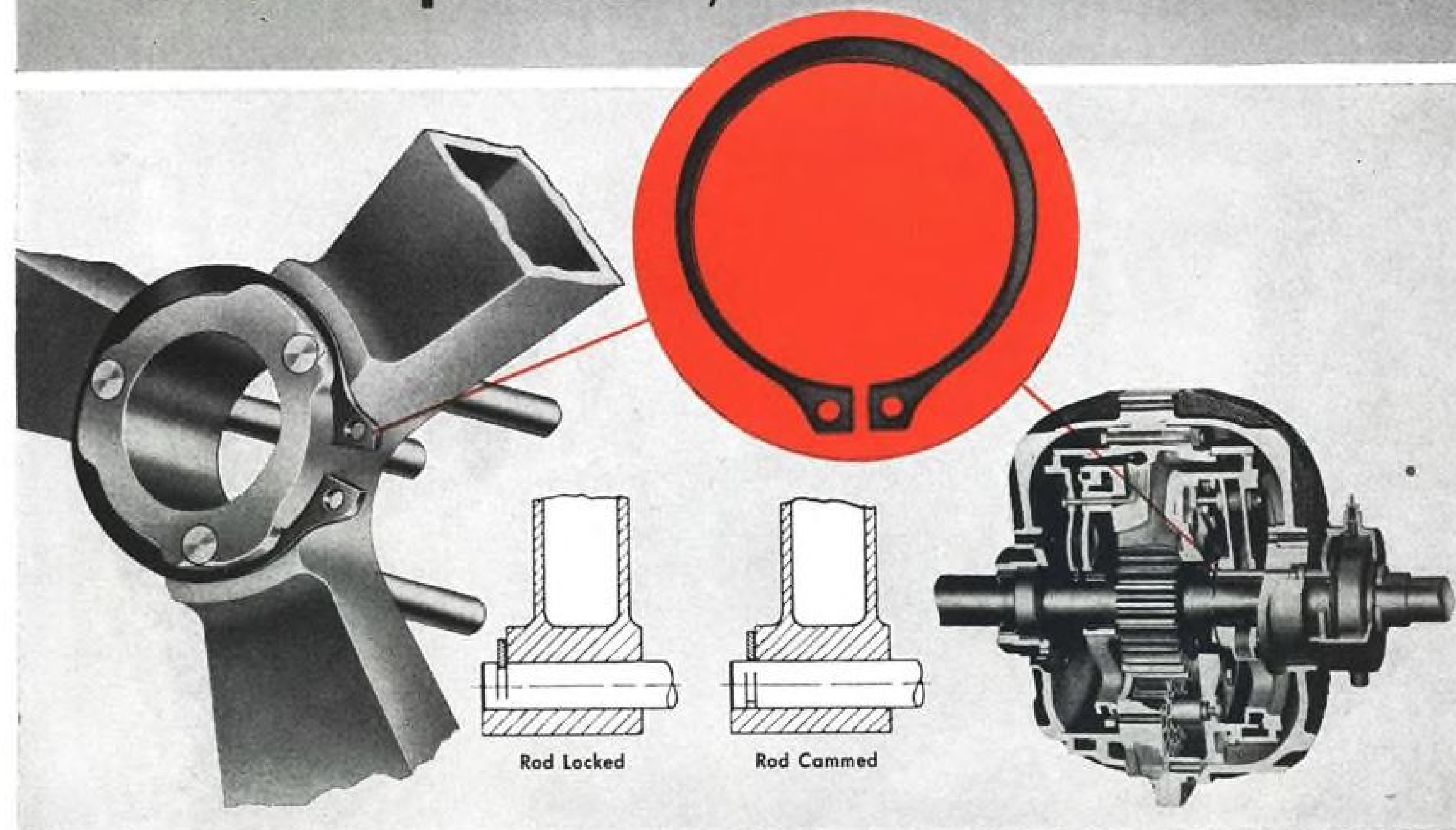
Device is 127 ft. long and features built-in oil filling and draining facilities, engine washing and draining provisions, tool cribs, and a light system for illuminating inspection holes, wheel wells, and other areas.

While designed specifically for the Navy version of the Air Force's C-54, dock also can be fitted to larger Douglas DC-6s. Entire stand can be disassembled and loaded into plane it services for airlift to a new location.

Only one in existence, dock was made by Barnes and Reinecke Co., Chicago. One more is scheduled for Patuxent, seven for the Naval Air Station, Moffet Field, Calif., and two for Frankfurt, Germany.

Estimated time for tearing down and reassembling stand is around 50 man-hours. Navy says dock pays for itself in about 90 days, because of the many labor-saving, maintenance short-cut and safety features which have been built into it.

Single TRUARC ring holds 3 valve rods, saves \$12 production, 10 hours maintenance



Unique feature of Thomas Varidraulic Drive design is this valve rod assembly, which permits removal and replacement of rods without disassembly of entire unit. One Truarc ring holds three rods, by engaging grooved recesses provided on one side only of each rod. When rotated

180°, rods act like cams...spread the ring...permit their easy removal. Ends of replacement rods are tapered for easy re-assembly. This design saves an average of 10 man hours of disassembly and assembly time, and eliminates the costly delay of returning the unit to the factory for repair.

Use of 8 Waldes Truarc Retaining Rings in the Varidraulic Drive results in an estimated production saving of \$12.00 per unit, reports Thomas Hydraulic Speed Controls, Inc., of Wichita, Kansas.

Savings in production materials and time, plus simplification of repair procedure with Waldes Truarc Retaining Rings tell only part of the story for Thomas Hydraulic. In their own words: "Considerably less skill is required in numerous machining operations and at assembly of the drive than would have been required if the design did not use Truarc rings."

"Our use of Truarc rings has contributed substan-

tially to a more economical design that permits sound sales pricing. Easier maintenance also provides an additional sales point."

Truarc can cut costs and improve your product, too. Wherever you use machined collars, nuts, bolts, snap rings, cotter pins—there's a Truarc ring that does a better job of holding parts together. Waldes Truarc Retaining Rings are precision-engineered, easy to assemble and dis-assemble. Only Truarc stays circular always, to give you a never-failing grip. Send us your drawings. Waldes Truarc engineers will be glad to show you how Truarc can help you.

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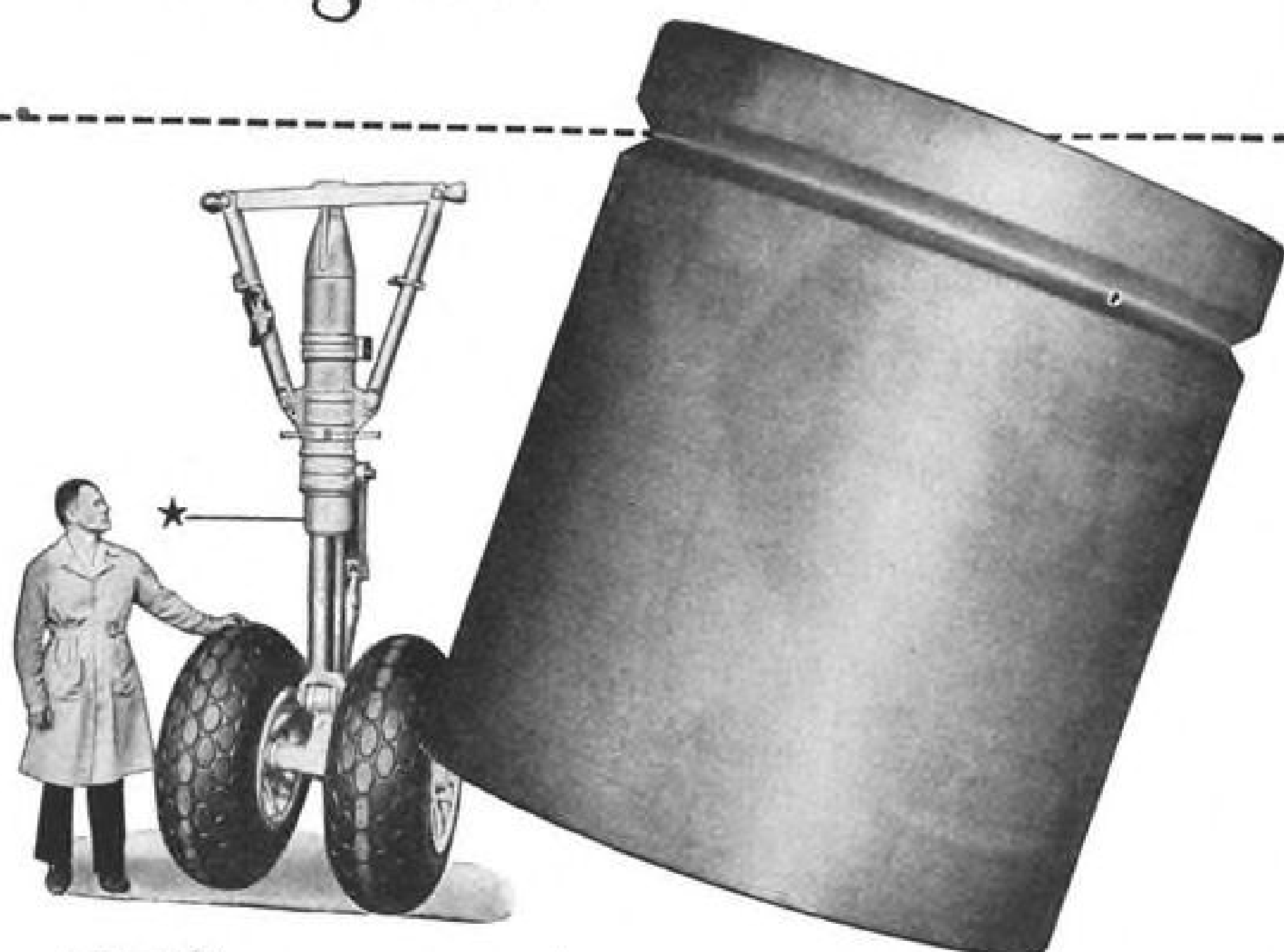
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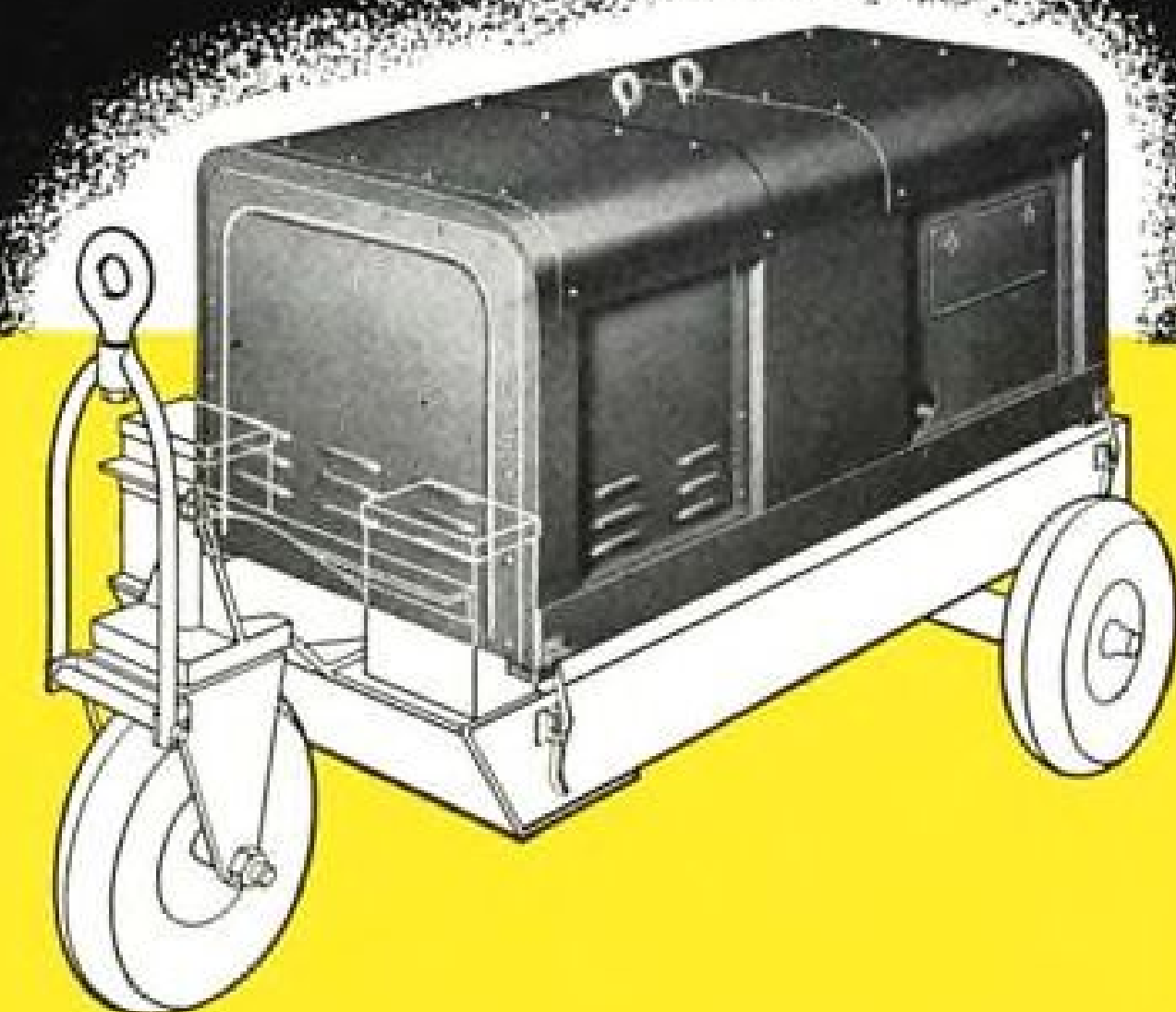
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Problem: to supply 400-cycle, a.c. power for testing instruments and operating the controls of B-36 bombers while on the ground—without running the six 3,000-hp engines that normally supply it in the air.

Answer: this compact, rain and weatherproof Jack & Heintz auxiliary power unit—another example of J & H ability to meet specialized aviation needs. 62.5 kva, 400-cycle, 120/208-volt, 3-phase, a.c., plus 21-amp, 28-volt, d.c. output is supplied from 60-cycle, 220/440-volt, 3-phase, a.c. input. Cart mounting illustrated is optional.

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NEW AVIATION PRODUCTS

Spray-Craft Finish

"Skylac" aircraft finish offered by Monsanto Chemical Co., St. Louis, Mo., resists chemical action of certain insecticides used in agricultural spraying. It is flame-resistant, has high gloss qualities, and requires only 4 to 5 applications. Claim is that ordinary finishes on spraying and dusting aircraft have been known to peel-off almost immediately, but that after refinishing with Skylac, operators encountered no difficulty. Company says Bell Aircraft Corp. already is applying product to all commercial helicopters leaving its factory and has recommended to its commercial operators that Skylac be used for refinishing exterior surfaces on its craft.



Relay Variety

Complete line of hermetically sealed relays offered by Automatic Electric Co., 1033 W. Van Buren Street, Chicago 7, Ill., are represented to satisfy temperature, humidity and immersion tests requirements demanded in armed forces specifications. Relays are available for hermetic sealing in various sizes and shapes of enclosures which are claimed to meet practically any engineering requirement for type of relay, relay grouping, mounting specifications, and space limitations. Relays available will accommodate operating potentials from a fraction of a volt to several hundred volts. Contact ratings vary from a few milliwatts to several hundred watts. Operate times vary from 1-100 milli-sec.



Hydraulic Power Unit

For press applications, clamping, shearing, static testing, jacking, pulling and metal forming, Model C air-operated hydraulic boost pump developed by Sprague Engineering & Sales Garden, Calif., operates on 100 psi. plant air supply to provide hydraulic pressures from 1000-30,000 psi.

Unit makes possible rapid ram travel to desired tonnage and return in matter of seconds. Hydraulic pressures are controlled by regulation of air inlet pressure.

Developed primarily for use with oil, pump also is available with special bronze or stainless steel parts for use with water or other corrosive fluids. Pump has 8 in. dia., is 10 in. high and weighs 20 lb. It is available as separate unit or in power unit, Model C-R, which includes pump, reservoir, pressure gauge and necessary control valves.



Flexible Sander

Air-driven belt sander announced by Buckeye Tools Corp., 21 W. Apple St., Dayton 1, Ohio, adapts to flat, concave or convex surfaces. Device can be used for finishing sheet metal, solid castings and all types of materials in iron, steel, brass, bronze, solder, aluminum and magnesium. Unit also is suitable for finishing and sanding wood products. Manufacturer reports tool has successfully undergone comprehensive tests in automotive industry.

Finish Saves Tubing

"Perma-tube" electric weld steel tubing, coated with plastic rust-resisting finish, is designed to withstand severe corrosive conditions. Offered by Jones & Laughlin Steel Corp., Pittsburgh, Pa., material can be fabricated by bending, expanding, flanging, upsetting, fluting, and flattening, without damage to coating.

Finish is Vinsynite pretreatment

Engineering Aid

For engineers, draftsmen and navigators, vest-pocket combination protractor, compass, square, scale and lettering device is offered by L. A. Cushon, 9100 Roselawn Ave., Detroit, Mich. Graduations and locating lines on tool are represented to be accurate to .0002 in. Device is made of clear plastic and is reported not to warp, burn or distort.

AVIATION WEEK, June 13, 1949

ENGINEERING

33

PRODUCTION

\$172 Million for Electronics

Air Force, Navy and CAA budget large fiscal 1950 orders for electronic and communications equipment.

U. S. government agencies plan to spend approximately \$172 million on electronic and communications equipment during fiscal 1950.

Bulk of this money will be spent by U. S. Air Force, which has a \$115 million budget item earmarked for this purpose. Navy budget calls for \$15 million in electronics equipment, while Civil Aeronautics Administration has asked Congress for \$42 million for federal airways system equipment.

Only the CAA appropriation faces any serious danger of a congressional slash. The House Appropriations Committee recommended a \$13 million cut in the CAA airways equipment program but the Senate has not yet acted on the CAA budget.

► **USAF Program**—The USAF electronics and communications budget is based on a six point program, including conversion of military aircraft radio communication from very high to ultra high frequencies; identifications systems to distinguish friendly from enemy aircraft; global communications network; air navigation system; coding and decoding systems; and a radar warning net.

Following is the breakdown of the USAF program:

- **UHF Conversion, \$22,931,424.** This is for the second step in a joint USAF-Navy five-year program to put military aircraft radio communications into the UHF area and remove them from very high frequencies where they now are crowding commercial airlines and other civil agencies. This program will operate between 225 and 400 megacycles. Total cost of USAF share of the five-year conversion program is estimated at \$107 million.

- **Identification Systems, \$10,229,884.** Since U. S. aircraft identification equipment (IFF) used during World War II is now available to potential enemies, a new-type system for both air and ground equipment must be devised. Although budget item includes only USAF program, the new IFF eventually will be standardized for use by Army and Navy as well. USAF item for fiscal 1950 will supply about 40 percent of the USAF aircraft equipment needed under the program.

- **Command Communications, \$7,192,752.** USAF is establishing a global command communications network to

enable it to maintain operational control of its aircraft either in the air or on the ground in any part of the world. The fiscal 1950 program includes: a six-channel radio teletype and three-channel simultaneous air-ground facilities global network that will require a three-year program for completion; new high powered air-ground radio stations at strategic locations throughout the world; special command communication facilities at Washington, D. C. and Limestone, Me., and a new command radio network in Alaska.

- **Air Navigation Aids, \$27,155,304.** This includes: \$10,362,631 for GCA equipment of the latest type; \$3,104,265 for traffic control radar; \$1,045,308 for omni-ranges; \$1,532,000 for VHF airborne navigation receivers; \$609,000 for low-frequency Loran; \$9 million for weather communication equipment, control tower consoles, X-band ground radar beacons, and point-to-point communications equipment.

- **Radar Warning Net, \$45,054,416.** This item represents the third installment in a six-year program to provide new type air raid warning and fighter control network for the North American continent. The fiscal 1950 item will provide about 15 percent of the equipment eventually required.

- **Coding Equipment, \$2,436,220.** This equipment for coding and de-coding is part of a six-year program to replace obsolete equipment used during the last war, the security of which is now of doubtful effectiveness.

- **Navy Program**—The Navy's \$15 million will be spent for purchase of service test quantities of new electronic equipment and to acquire engineering data needed for their high volume production; modernization of present fleet electronic equipment for aircraft and submarine detection and counter-radar measures; and to provide spares and maintenance equipment for electronic devices now in service.

The CAA \$42 million program breaks down into:

- **DME, \$15,043,226,** to buy 560 units of distance measuring equipment (DME) for installation at sites of the VHF omni-directional range stations and at the end of runways equipped with ILS systems. Unit cost is \$29,594 apiece for those at ILS sites and \$25,-

780 for those installed with omni-ranges.

- **ILS, \$4,294,000,** to buy 38 additional VHF beam instrument landing systems; \$349,848 to relocate ILS systems already installed; and \$1,723,746 to modernize ILS equipment already installed.

- **GCA, \$2,340,000,** to purchase 13 precision beam radar (GCA) approach sets. CAA estimated the cost of these units at \$102,745 each.

- **Traffic Control Radar, \$4,332,000,** for purchase of 19 traffic radar. This radar will give search coverage within a 45-mile radius of airports for traffic control purposes.

- **Automatic VHF/DF, \$601,392,** for purchase of 44 sets of automatic VHF direction finders. This equipment is used in connection with traffic control radar to take bearings on any aircraft transmitting on VHF.

- **Approach Lights, \$1,335,685,** for purchase of 13 sets of high intensity approach lights.

- **Control Towers, \$536,160,** for establishment of 12 new airport traffic control towers.

- **Approach Control, \$495,000,** for purchase of 15 approach control timing devices to be used in airport control towers to calculate approach time of arriving airport and aid in scheduling a smooth flow of traffic onto the landing runway.

- **Mechanical Interlocks, \$442,000,** for purchase of 30 mechanical interlocks. This equipment co-ordinates air traffic control information between control centers and the control towers at main terminals.

- **Altimeter Setting Indicators, \$16,850,** for purchase of 54 to be used in airport control towers.


Remainder of the CAA funds will be spent for communications equipment and modernization of CAA-sponsored airways in Alaska and the Pacific.

PRODUCTION BRIEFING

- **Fairchild Engine and Airplane Corp.** has sold its inventory of spare parts for F-24 four-place planes and PT-19 trainers to Arkwin Corp., which will take over the spare parts business previously handled by Fairchild Personal Plane division and occupy the same buildings at Strother Field, Winfield, Kan.

- **Northrop Aircraft Inc.** is increasing its space by leasing a new 156,000 sq. ft. warehouse from Pacific Iron and Steel for storage of raw materials and components.


- **General Tire & Rubber Co.** has consolidated two subsidiaries, Marquardt Aircraft Co., Van Nuys, Calif., and General Tire & Rubber Co. of Calif. at



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The arc you see here is automatically welding the two spheres of a Bendix-Pacific Hydraulic Pressure Accumulator at the equator. The weld must withstand — in tension — 12,000 lbs. per sq. in. internal pressure. Exhaustive research has shown that atomic hydrogen welding is the best method that can produce such a bond and Bendix-Pacific is proud to have pioneered the application of this automatic technique which insures far greater precision than is possible with human control. Bendix-Pacific Accumulators combine greater strength, lighter weight and better performance.

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South Pasadena, moving the South Pasadena operations to the Van Nuys plant. Consolidation will use the name Marquardt Aircraft Co., and will be headed by Roy Marquardt, president and general manager, and M. M. Gilman, executive vice president.

► Ryan Aeronautical Co. has booked \$1 million in new business for its metal products division in the past 30 days, principally exhaust systems for military and transport planes and stainless steel jet engine components.

► Cub Aircraft Corp. has been merged with Transvision-Television Ltd. of Canada as the aircraft division of that organization, and will continue to make Piper and Stinson aircraft in Canada, at the Cub plant at Hamilton, Ontario. Gordon Elkins, former chief officer of Weston Aircraft, Toronto has been named manager of the aircraft division.

► Chance Vought Aircraft division of United Aircraft Corp. has virtually completed its move to Dallas from Stratford, Conn., with all employees and equipment and components expected to be moved by June 30.

► Consolidated Vultee's San Diego division has won its third National Safety Council award for shop production efficiency without a disabling injury to an employee in 2,285,374 man hours from Jan. 24 to Mar. 15. It is the only aircraft company and one of two manufacturing companies west of the Mississippi to win the award three times.

► General Electric is installing machine tools in the plant it has leased from WAA at Westover, Mass., for production on Air Force contracts and is expected to employ 800 workers by year's end.

WHO'S WHERE

Westinghouse Electric Corp., Pittsburgh, elected James H. Jewell, manager of Apparatus Sales, and John M. McKibbin, assistant to the vice president and manager of Advertising and Sales Promotion, as vice presidents. Herbert P. MacDonald, treasury manager in the Eastern District office, was elected assistant treasurer. He also has been appointed credit manager.

Curtiss-Wright Corp. named L. L. Hotsenpiller factory superintendent of the Columbus plant, replacing J. O. Wander, now on leave of absence. Previously, Hotsenpiller was assistant to H. F. Brown, factory manager.

United Aircraft Corp. appointed Albert B. Walker an assistant secretary. Walker is in the Hamilton Standard Propeller division contract administration department.

Latest Air Force Bid Awards

Air Materiel Command procurement Division makes available to AVIATION WEEK the latest bid awards, shown on this page. Requests for further information should be addressed to Contracting Officer, AMC, Wright-Patterson AFB, Dayton, Ohio, attention: MCPPSX72, (AMC will resume in July the issuance of data on invitations for bids.)

ABSTRACTS

For steel, chrome, — nickel (49-1733):
Wyckoff Steel Co., Pittsburgh, on a bid of \$3822.64.

For aluminum alloy (49-1774):
Aluminum Co. of America, Washington, D. C., on a bid of \$5551.20.

For aircraft enamel (49-1836):
Lowe Brothers Co., Dayton, on a bid of \$10,821.96.

For 2044 shipping cases (49-1936):
Herkert & Meisel Trunk Co., St. Louis, on a bid of \$91,775.60.

For 520 starter assemblies (49-1968):
American Metal Refining Co., Detroit, on a bid of \$24,440.

For adapter assemblies (49-1936):
Companies sharing—American Phenolic Corp., Chicago, on a bid of \$9093.98; California Electronics Supply Inc., Los Angeles, on a bid of \$1080.81; Kings Electronics Co., Inc., Brooklyn, on a bid of \$3150.70; Waltham Horological Mfg. Co., Waltham, Mass., on a bid of \$9317.60, and Communications Equipment Co., New York, on a bid of \$3079.92.

For bolt, elbow, ferrule, clip, etc., (49-1305):
Companies sharing—Air Associates, Inc., Teterboro, N. J., on a bid of \$469; Heli Coil Corp., Long Island, N. Y., on a bid of \$35.20; Dzus Fastener Co., Inc., Babylon, N. Y., on a bid of \$1016.49; Parker Appliances Co., Cleveland, on a bid of \$133.65; Elastic Stop Nut Corp., Union, N. J., on a bid of \$1274.21; Deutsch Co., Los Angeles, on a bid of \$57; Ohlson International Corp., Long Island, N. Y., on a bid of \$110; Pan-American Tool & Machine Corp., Dayton, on a bid of \$1124; Arseo Mfg. & Sales Corp., New York, on a bid of \$700; Monadnock Mills, San Leandro, Calif., on a bid of \$410; Irvin W. Masters, Inc., Burbank, on a bid of \$360; Aircraft Fitting Co., Cleveland, on a bid of \$537.50, and American Chain & Cable Co., Inc., Detroit, on a bid of \$350.

For strip assemblies (49-1334):
Companies sharing—American Radio Hardware Co., Inc., Mount Vernon, N. Y., on a bid of \$16,715.80; Kulka Electric Mfg. Co., Mount Vernon, N. Y., on a bid of \$441.10; Herbach & Rademan, Inc., Philadelphia, on a bid of \$106.30, and Clinch Mfg. Corp., Chicago, on a bid of \$717.46.

For varnish (49-1356):
Companies sharing—Westinghouse Electric Corp., Dayton, on a bid of \$4477.32; Lasting Products Co., Baltimore, on a bid of \$4972.80; Glidden Co., Cleveland, on a bid of \$10,655.84, and Cook Paint & Varnish Co., Detroit, on a bid of \$13,728.40.

For printing machines (49-1363):
Whipple & Co., New York, on a bid of \$24,364.

For 166 aerial camera focalscopes (49-1512):
Polan Industries, Huntington, West Virginia, on a bid of \$37,284.60.

For cellulose plastic sheets (1617):
Celanese Corp., of America, New York, on a bid of \$5358.

For 290 relays (49-1637):
Companies sharing—Continental Electronics, Brooklyn, on a bid of \$2509.75; Allied Control Co., Inc., New York, on a bid of \$621.60, and Metals & Controls Corp., Attleboro, Mass., on a bid of \$214.

For hose (49-1854):
Companies sharing—Anchor Rubber Co., Dayton, on a bid of \$1710; Goodyear Tire & Rubber Co., Inc., Akron, on a bid of \$2973, and B. F. Goodrich Co., Akron, on a bid of \$2730.

For 4000 yards flannel outing (49-1871):
Hubbell & Miller Co., New Rochelle, N. Y., on a bid of \$2360.

For 50 maintenance spare parts (49-1873):
Radio Receptor Co., Inc., New York, on a bid of \$26,000.

For 60 vaults film storage racks (49-1905):
Dayton Fabricated Steel Co., Dayton, on a bid of \$27,620.69.

For lacquer (49-1364):
Companies sharing—Atlas Powder Co., Chicago, on a bid of \$31,000.32; Cook Paint & Varnish Co., Detroit, on a bid of \$148,699.54; Andrew Brown Co., Los Angeles, on a bid of \$36,676.08; Titanine Inc., Union, N. J., on a bid of \$10,589.40; Sherwin-Williams Co., Cleveland, on a bid of \$32,073.60, and W. P. Fuller & Co., Los Angeles, on a bid of \$8058.64.

For 7600 bag assemblies etc., (49-1304):
Companies sharing—Waco Aircraft Co., Troy, O., on a bid of \$21,460, and Irving Air Chute Co., Inc., Buffalo, on a bid of \$317,487.04.

For cable assemblies (49-1212):
Companies sharing—Molded Insulation Co., Philadelphia, on a bid of \$34,267.92, and Coil Winders, Inc., Brooklyn, on a bid of \$50.

For cap air crew heavy (49-1474):
Sunbeater Mfg., Co., Dallas, on a bid of \$23,890.02.

For multimeters & Technical data (49-1167):
Utility Electronics Corp., Newark, N. J., on a bid of \$105,006.92.

For photographic equipment (49-1412):
Companies sharing—Malone Camera Stores, Inc., Dayton, on a bid of \$1103; Photogenic Machine Co., Youngstown, O., on a bid of \$649.70; Pako Corp., Minneapolis, on a bid of \$5660.50; Simmon Bros., Inc., Long Island, N. Y., on a bid of \$58.50; Fairchild Camera & Instrument Corp., Jamaica, N. Y., on a bid of \$476.70; Jas. H. Smith & Sons Corp., Griffith, Ind., on a bid of \$386; Otto K. Olesen Co., Hollywood, on a bid of \$7200; Arel, Inc., St. Louis, on a bid of \$215.70; Minnesota Mining & Mfg. Co., St. Paul, on a bid of \$1753.30, and Duophoto Corp., New York, on a bid of \$1134.

For aluminum alloy (49-1419):
Aluminum Co., Washington, on a bid of \$14,032.

For inverters (49-1456):
Elecor, Inc., Chicago, on a bid of \$94,740.18.

For 11,000 pounds dehydrating agent (49-1471):
Davison Chemical Corp., Baltimore, on a bid of \$43,629.11.

For benches, work (49-1604):
Companies sharing—Dayton Supply & Tool Co., Dayton, on a bid of \$15,583.58, and Marlin Cox, Hamburg, N. J., on a bid of \$3825.60.

For 67 table assemblies (49-1642):
Dayton Aircraft Products, Inc., Dayton, on a bid of \$3180.49.

For aircraft batteries (49-1700):
National Battery Co., Depew, N. Y., on a bid of \$5346.90.

For 10,000 inhibitors (49-1726):
Octagon Process, Inc., Brooklyn, on a bid of \$5695.

For oil filters (49-1731):
Davison Chemical Corp., Baltimore, on a bid of \$15,340.

For aluminum alloy sheets (49-1781):
Reynolds Metals Co., Louisville, on a bid of \$10,722.06.

For 2000 holder assemblies (49-1821):
Felsenthal & Sons, Inc., Chicago, on a bid of \$10,200.

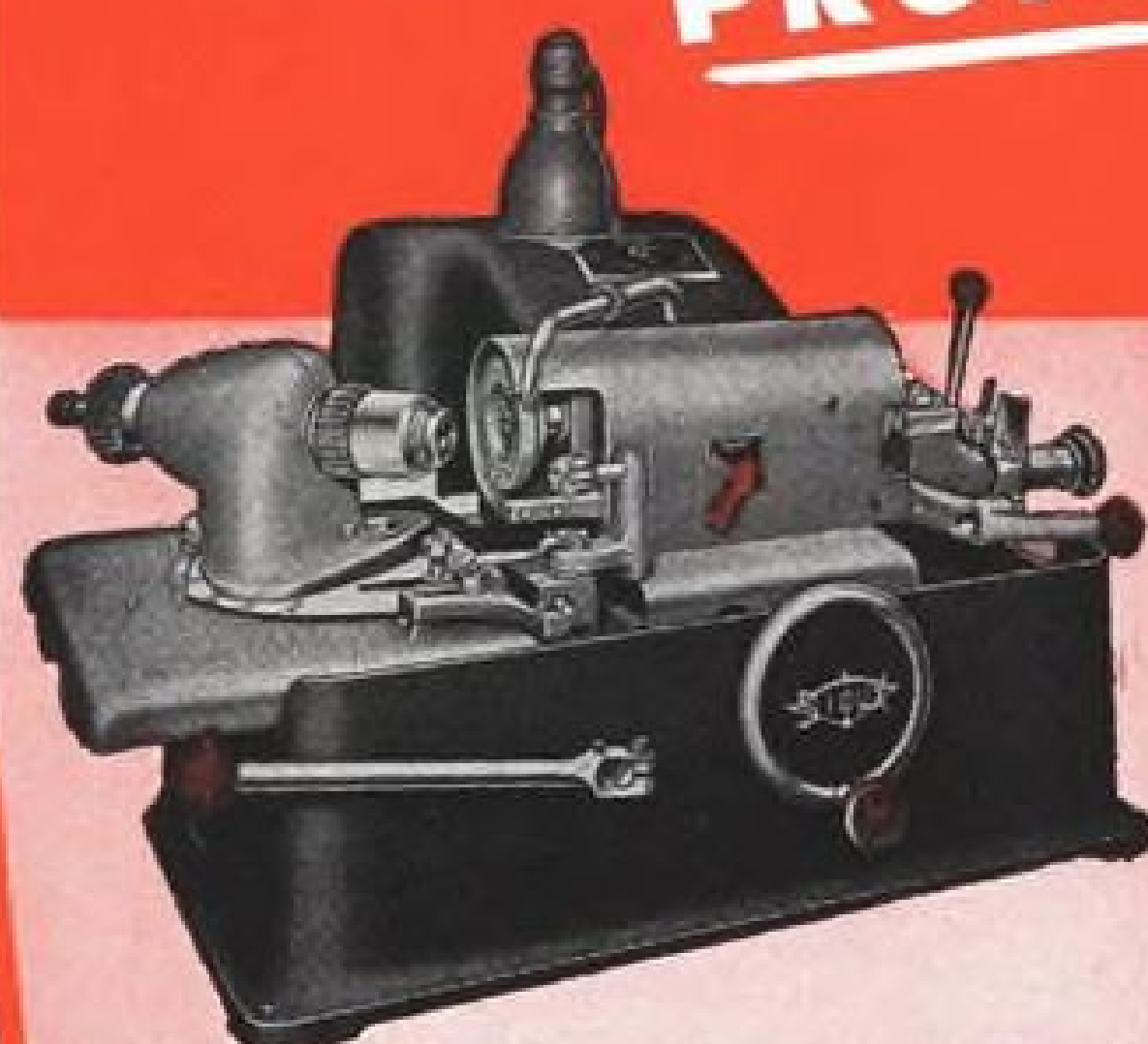
For linseed oil (49-1837):
Impervious Paint & Varnish Co., Philadelphia, on a bid of \$10,216.25.

For battleship linoleum (49-1869):
Bonafide Mills, Inc., New York, on a bid of \$3840.

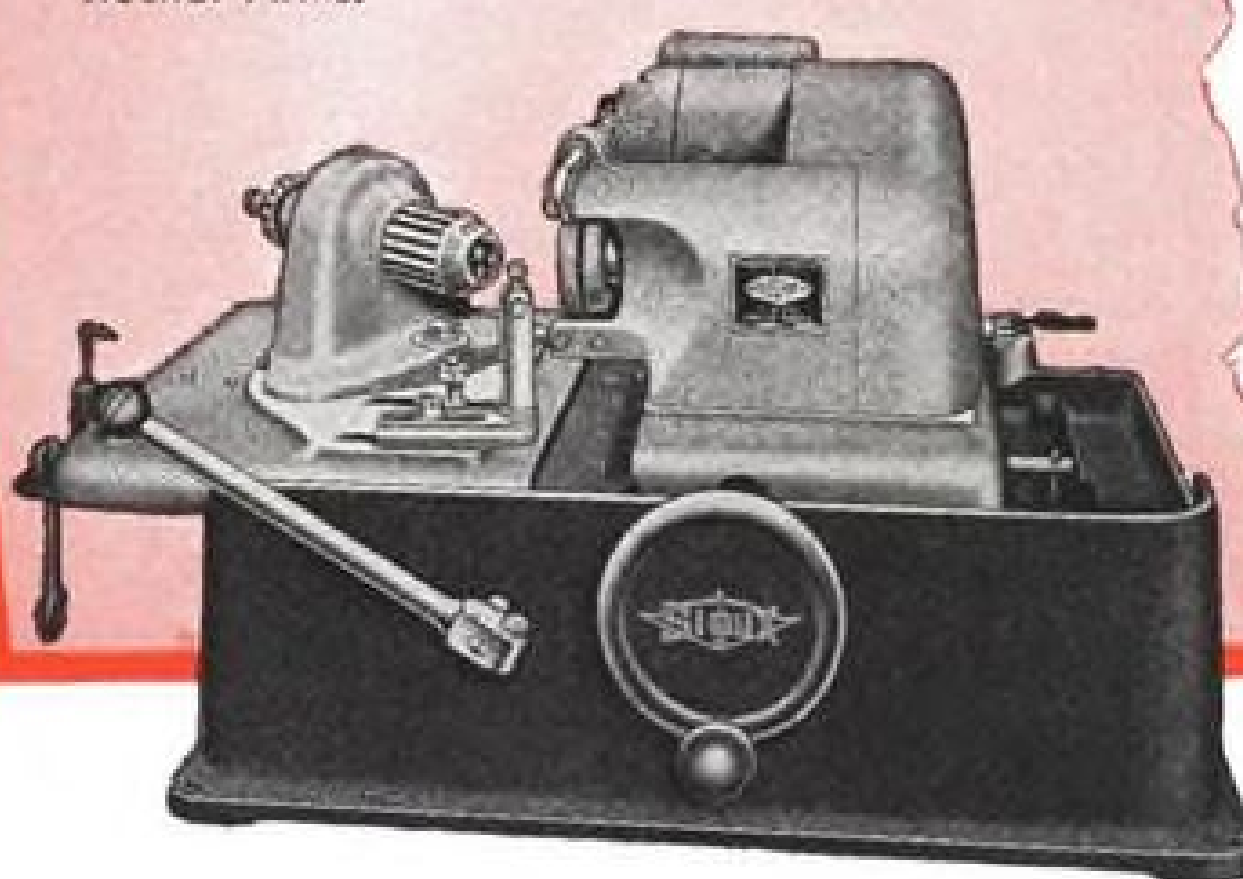
For cartridges facelets, etc., (49-1594):
Companies sharing—Willson Products, Inc., Reading, Pa., on a bid of \$495.30; Safety Clothing & Equipment Co., Cleveland, on a bid of \$1060, and Independent Glove Co., Chicago, on a bid of \$4500.

SIOUX

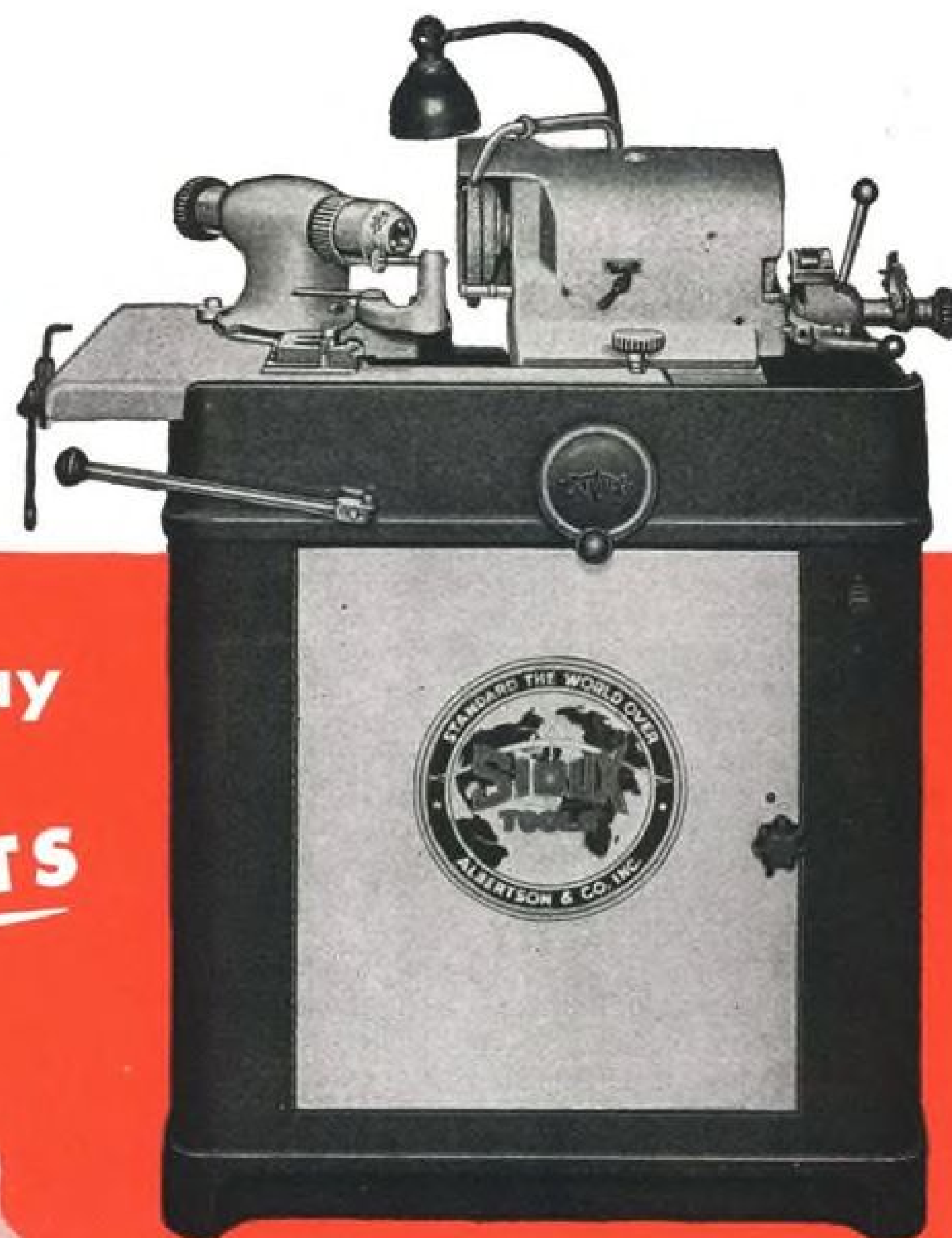
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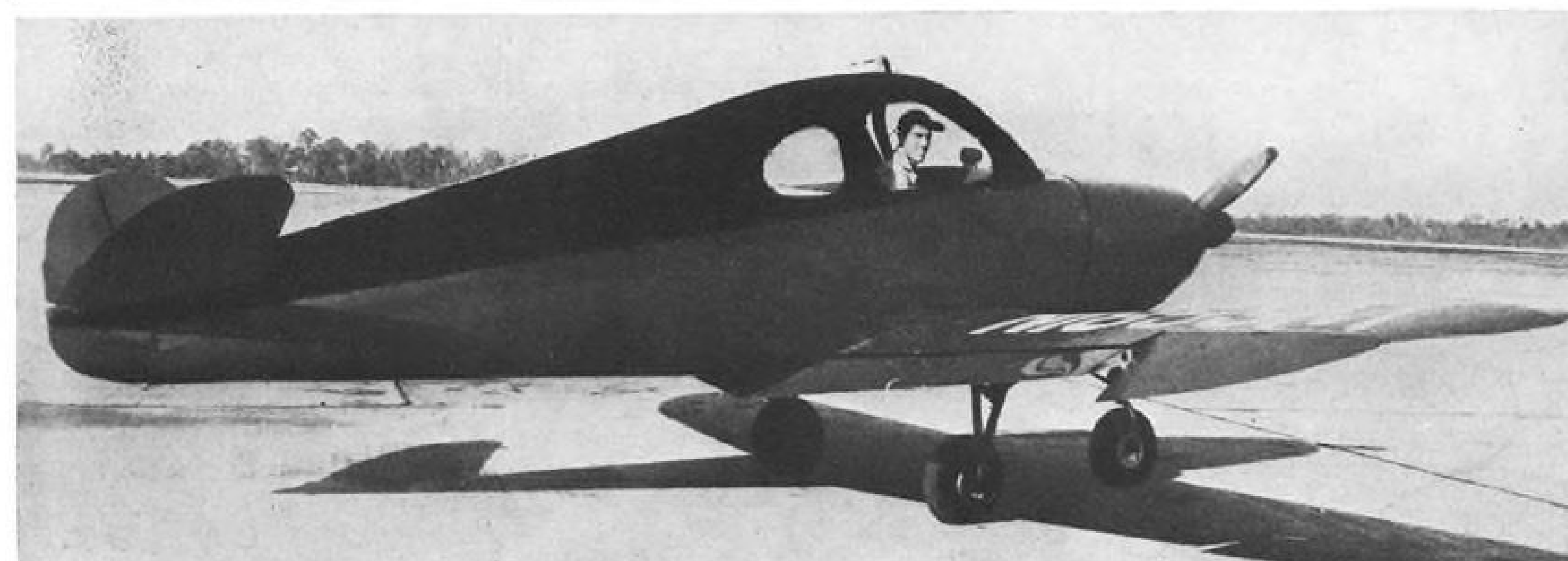
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SALES & SERVICE



New Three-Placer to Sell at \$2500

All-metal plane with claimed speed of more than 150 mph. has folding wings as standard equipment.

By Alexander McSurely

A new all-metal three-place tricycle-gear personal plane with folding wings and a V-tail, and priced at \$2500, has been announced by Jamieson Aircraft Co., Deland, Fla. It is named the Jupiter.

C. M. Jamieson, former Beech and Culver engineer, who heads the new company, quotes a cruising speed of "over 150 mph." and a landing speed of under 40 mph. for the Jupiter. Plane is powered with a 115 hp. Lycoming O-235-C1 engine turning a fixed-pitch Sensenich wood propeller.

► **Flight Tests**—Prototype is well advanced in its CAA type certification flight tests, Ross Holdeman, test pilot and sales director reports. Production is proceeding on the first 10 planes, scheduled for delivery by the end of July. With present manufacturing facilities at Deland Airport, it is planned that production will be accelerated within three to five months to a rate of 40 to 50 planes a month.

Holdeman said the airplane will be sold at the \$2500 figure with standard equipment including:

Choice of four color combinations (dark blue, dark green, tan with maroon trim and maroon with tan trim); fully retractable electrically-operated tricycle landing gear with 6.00 x 6 wheels (main and nose); hydraulic brakes; starter; generator; battery; navigation lights; landing lights; cabin heater; complete soundproofing; full upholstery; fixed-pitch wood propeller with spinner;

large baggage compartment licensed for 120 lb.; two child's jump seats for baggage compartment; airspeed indicator; altimeter; tachometer; compass; fuel level and pressure gauges; oil pressure and temperature gauges.

While final performance figures are being withheld pending completion of certification Jamieson reports cruising speed of more than 150 mph. at sea level with full gross load (1600 lb.); landing speed of under 40 mph.; rate of climb, 1050 ft./min.; 700-mile range; useful load, 800 lb.

The Jupiter is described as 20 ft. 10 in. long, 6 ft. 9 in. high with 29 ft. wingspan and wheel tread measuring 6 ft. 2 1/2 in.

► **Look-A-Likes**—Photos of the Jupiter indicate a superficial resemblance between the new V-tailed three-placer, and the four-place Beech Bonanza around the rear of the plane, while the forward fuselage and wings are reminiscent of the postwar Culver Model V.

Construction of the Jupiter is 24ST aluminum alloy stressed skin throughout fuselage and wing. Fuselage is designed in three pieces for ease of assembly. Simple hand-operated wing-folding mechanism is standard unless specified, and reduces the span to little more than the wheel tread figure. This gives economical hangar storage.

► **Stall-Spin**—Holdeman reports that flight characteristics of the Jupiter have already been tested extensively, but that efforts to stall and/or spin the airplane have been unsuccessful. Jamieson has stated that he does not expect to injure

other flight characteristics of the airplane to achieve spinproof-stallproof certification nor to go into interconnected controls to attain this.

Holdeman states that the plane has excellent stability, and rides rough air without any tendency to "hunt." Prototype model uses stick control but production planes will have wheel control column.

► **Wide Seat**—Cabin is entered through either side, through doors 43 in. high and 36 in. wide, and the seat is 48 in. wide.

To skeptical comments about the unusually low price for an airplane of the performance and construction described, officials of the Jamieson company replied: "We are not fooling on the price and have already committed ourselves to make deliveries at this figure." Pricetag, incidentally, includes full oil and fuel supply for flyaway.

Dealerships are being arranged by Jamieson and Holdeman with a number of operators, on a "service territory" basis, with emphasis on a policy of continuing service to purchasers of the airplane.

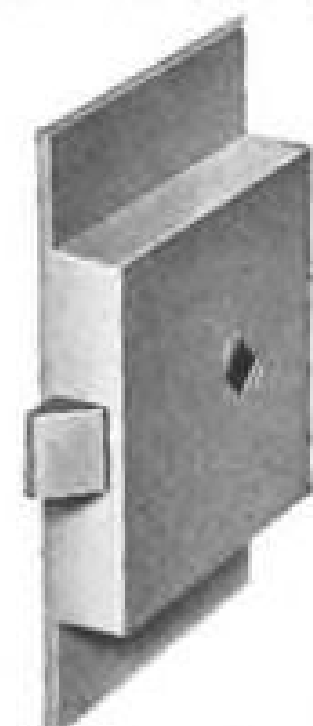
\$125,000 Spray Job

Central Aircraft, Inc., of Yakima, Wash., has completed a 10-day aerial spraying of 166,000 acres of Oregon forests in a \$125,000 project which required eleven planes and three helicopters.

Albert Ausve and Herman Poulin directed the operation, with 20 men under them, working from five fields. Work had to be completed in 10 days, because that marks the feeding period of the budworm, a small pest which thrives on fir buds and can destroy a forest within three years if not stopped in time.



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BRIEFING FOR DEALERS & DISTRIBUTORS

HELIOPLANE RIVAL?—Sources in Deland, Fla., say that the three-place Jupiter prototype (described on previous page) is doing some short landings and takeoffs and slow flying that are something to watch. Test pilot Ross Holdeman marked out a 100 ft. circle on the airport and has been flying in and out of that. While landing speed is officially quoted at "below 40 mph," local sources say the plane flies much slower actually.

CAPT. MAX CONTINUES—Aeronautical Training Society re-elected Capt. Maxwell W. Balfour of Spartan School of Aeronautics, Tulsa, Okla., president, at the recent meeting in Dallas. It also returned Wayne Weishaar as secretary and treasurer. Oliver L. Parks, president of Parks Aircraft Sales & Service, East St. Louis, Ill., was elected vice-president.

Directors named in addition to Balfour and Parks are: E. Merritt Anderson, Milwaukee; William F. Long, Dallas; Hal Darr, Chicago and Denver; Millard Davis, Atlanta; William J. Graham, Pittsburgh; C. C. Moseley, Glendale, Calif.; Albert I. Lodwick, Lakeland, Fla.; Harry S. White, Palo Alto, Calif.; Wesley N. Raymond, Daytona Beach, and Clarence Page, Oklahoma City.

AVIATION DEVELOPMENT—If CAA Administrator Del Rentzel gives his new Director of Aviation Development, Wiley Wright, some authority and does not permit his program to be blocked by reactionaries in Washington and in the field, it seems likely that private flying may benefit considerably from the creation of the new office. General Order No. 5 signed by Rentzel sets up an ambitious program for the new development office. Key to watch is the aviation extension division, whose head is not yet named. It is charged with developing programs and carrying them out. It could be either a strong force to help light planes and small airports out of their doldrums, or just another dormitory for government personnel.

LIGHTPLANE BRIEFS—Walter H. Beech, president of Beech Aircraft Corp. recently made delivery of the 2000th four-place Beech Bonanza to V. B. Likens of Flying L Ranch, Davis, Okla. . . Cessna is conducting tests at Lake Afton, near Wichita, on an Edo float installation for the new all-metal four-place 170. . . Cessna also announces that it delivered the 1000th Model 170 recently to King Cruse, San Benito, Texas distributor. . . Luscombe Airplane Corp. is equipping all its new airplanes with stainless steel mufflers, as standard equipment. . . National Aeronautical Corp. reports that production of VHF Omni Range converters for the small Narco VHF navigation receiver designed for use in personal planes was to be doubled in June with a new assembly line and virtually double the number of workers previously assigned.

BELOW SAFE ALTITUDES—Probable cause of the fatal crash of a four-place Beech Bonanza near Cherryland Airport, Sturgeon Bay, Wis., last Dec. 4, was pilot's attempt to maintain visual contact in poor visibility, by flying below minimum safe altitude, the CAB reported last week. Pilot Karl Reynolds had approximately 1000 hours, including 200 hrs. at night and 450 in the Bonanza. Plane struck a tall pine tree, crashed and burned in a wooded area eight miles from the airport after circling for approximately 45 minutes in the airport vicinity. There was no evidence of mechanical failure or malfunctioning of any part of the airplane prior to crash, CAB reported.

SAFFORD NAMED—E. S. (Ed) Safford, formerly Beech export sales manager, has been advanced to sales director for the company filling vacancy left by resignation some time ago by Lee H. Smith.

—ALEXANDER MCSURELY

AIR TRANSPORT

Rickenbacker's Proposal Scorned

Woolman says offer to take over five carriers is bid for monopoly, while Putnam calls it cannibalization.

By Charles Adams

A deluge of cold water has descended on Eastern Air Lines President E. V. Rickenbacker's proposal to save the government \$10 million annually in mail pay by taking over five competing carriers (AVIATION WEEK, June 6).

Delta Air Lines President C. E. Woolman, and Chicago & Southern Air Lines Board Chairman Carleton Putnam have vigorously denounced the plan. Civil Aeronautics Board Chairman Joseph O'Connell has suggested pointedly that there may be more (or less) to it than meets the eye.

► **Woolman Burns**—Rickenbacker, in a letter to Sen. Edwin Johnson (D., Colo.), Chairman of the Senate Interstate and Foreign Commerce Committee, offered to operate the routes of Delta, Chicago & Southern, Capital, National and Colonial Airlines at EAL's non-subsidy mail rate. Woolman, in a scorching reply, wrote Sen. Johnson:

"The gratuitous proposals contained in (Rickenbacker's) letter should be recognized as no more than studied expediency; the self-serving effort of Eastern Air Lines to resurrect and enlarge the comfortable monopoly which it once enjoyed.

"It is significant that, with the exception of Colonial Airlines, all of the companies which Eastern proposes to operate are within the competitive area of Eastern's system. EAL is presently seeking an extension of its routes to the Pacific Coast, but it has not, as yet, proposed to operate the routes of higher mail rate carriers lying to its west.

"It seeks instead to eliminate its competition through the popular appeal of effecting mail pay savings to the government."

► **Question of Monopoly**—Woolman declared that Eastern's proposals bring into sharp focus the basic issue of whether this country wants monopoly, with its resultant price of attenuated public service, or whether it wants the advantages of competitive enterprise. Records in CAB proceedings show that complaints against Eastern's service were frequent in the days before the Board created the competition which it found was needed, the Delta president continued.

"It is likewise admitted that (EAL's)



DELTA'S WOOLMAN: If he believed in monopoly, he'd take over Eastern.

will to serve the public has sharpened since competition was created. We have good reason to believe that Eastern is currently engaged in concentrating an abnormal competitive effort against National and Delta.

"Eastern is buying an unprecedented amount of advertising in National and Delta cities, and it is increasing the frequency of its competitive schedules. We believe that its purpose is clear.

► **Squeeze**—"The effect, of course, will be that all traffic will be diluted; but Eastern, with its larger system and greater resources, will emerge with a proportionately better record of costs versus revenues. Its present proposals, could they be consummated, would be an easier and less wasteful method of obtaining the same desired result—elimination of competition."

Woolman said Delta does not believe that monopoly in air transportation is in the public interest. "If we did believe it, we could as easily have offered to operate Eastern's system on the same terms as Eastern has offered to take over Delta and others—for Delta, costwise, is just as efficient an operator as Eastern.

"If Delta, with less than 25 percent of Eastern's gross revenues, can match Eastern (in revenue ton mile costs), then assuredly Delta could operate without loss of economy the lush EAL

routes from Boston, New York and Washington to Atlanta, New Orleans and Houston; from Boston, New York and Washington to all Florida points; from Detroit, Cleveland and Pittsburgh to the South; and from St. Louis and Memphis to the east and south. If monopoly were our goal and public service an after-thought, we would make the offer.

► **Subsidy for Eastern**—"It can be too easily overlooked that Eastern already has a valuable and continuing subsidy. This subsidy consists of the certificates of public convenience and necessity which it holds for highly profitable routes between large revenue-producing cities.

"We must not shape our national air transport policy on the basis of the peculiarly fortuitous circumstances in which any one carrier finds itself at a given moment."

► **Putnam: Cannibalization**—Chicago & Southern's Putnam also underlined the dangers of monopoly. He said that Eastern, having reached self-sufficiency through government aid, is now attempting to expand by cannibalizing other carriers.

CAB Chairman O'Connell wrote Sen. Johnson that Eastern's recent actions did not seem to jibe with Rickenbacker's new proposal. O'Connell disclosed that a few months ago Eastern, in discussions with New York banking interests, laid down "minimum conditions" for taking over Northeast Airlines.

These conditions included continuance of NEA's present (subsidy-class) mail rates for at least three years; elimination of a number of towns on Northeast's routes; and assurance (presumably from CAB) that no competing airline would parallel Northeast's routes. "I had not realized before (Rickenbacker's) proposal that Northeast is so much less desirable than, say, Colonial, as to warrant the apparently unconditional offer for the routes of the latter," O'Connell observed.

► **O'Connell Asks Caution**—The Board chairman noted that Eastern has pending before CAB an application for \$8.40 a ton mile mail pay for its Miami-San Juan, Puerto Rico, route (compared to its domestic rate of about 68 cents a ton mile).

Amendment of the Civil Aeronautics Act to create, in effect, an absolute monopoly of north-south air transportation in the territory east of the Mississippi will require careful scrutiny, O'Connell told Sen. Johnson in advising a cautious approach to Eastern's proposal.

► **Latin America Eyed**—Meanwhile, EAL took steps to protect itself from alleged threats to its Latin American business. It asked CAB for a vast network of new routes from New York,

Miami, New Orleans and other domestic points to Bogota, Colombia; Caracas, Venezuela; Nassau, Bahamas; Havana, Cuba; Balboa, Canal Zone; Mexico, Jamaica, Guatemala, Honduras, El Salvador, Nicaragua, Costa Rica, Haiti, the Dominican Republic, and the Netherlands West Indies.

Eastern said National Airlines' proposed equipment interchange with Pan American Airways and Panagra would divert connecting traffic to and from Latin America which now passes over EAL's domestic routes. In recent months, Eastern declared, it has become increasingly aware of a "planned program" on the part of other carriers to take away nearly all the connecting Latin American business EAL has pioneered.

PAA Revenues At Record High

In an annual report emphasizing Pan American Airways' deep interest in promoting coach-type air travel, President Juan Trippe this month told stockholders that their company earned an estimated \$4,590,000 during 1948 on record gross revenues of \$145,216,000 for that period.

The estimated net profit represents about a 5 percent return on PAA's investment. Earnings for 1947 were about \$2,960,000.

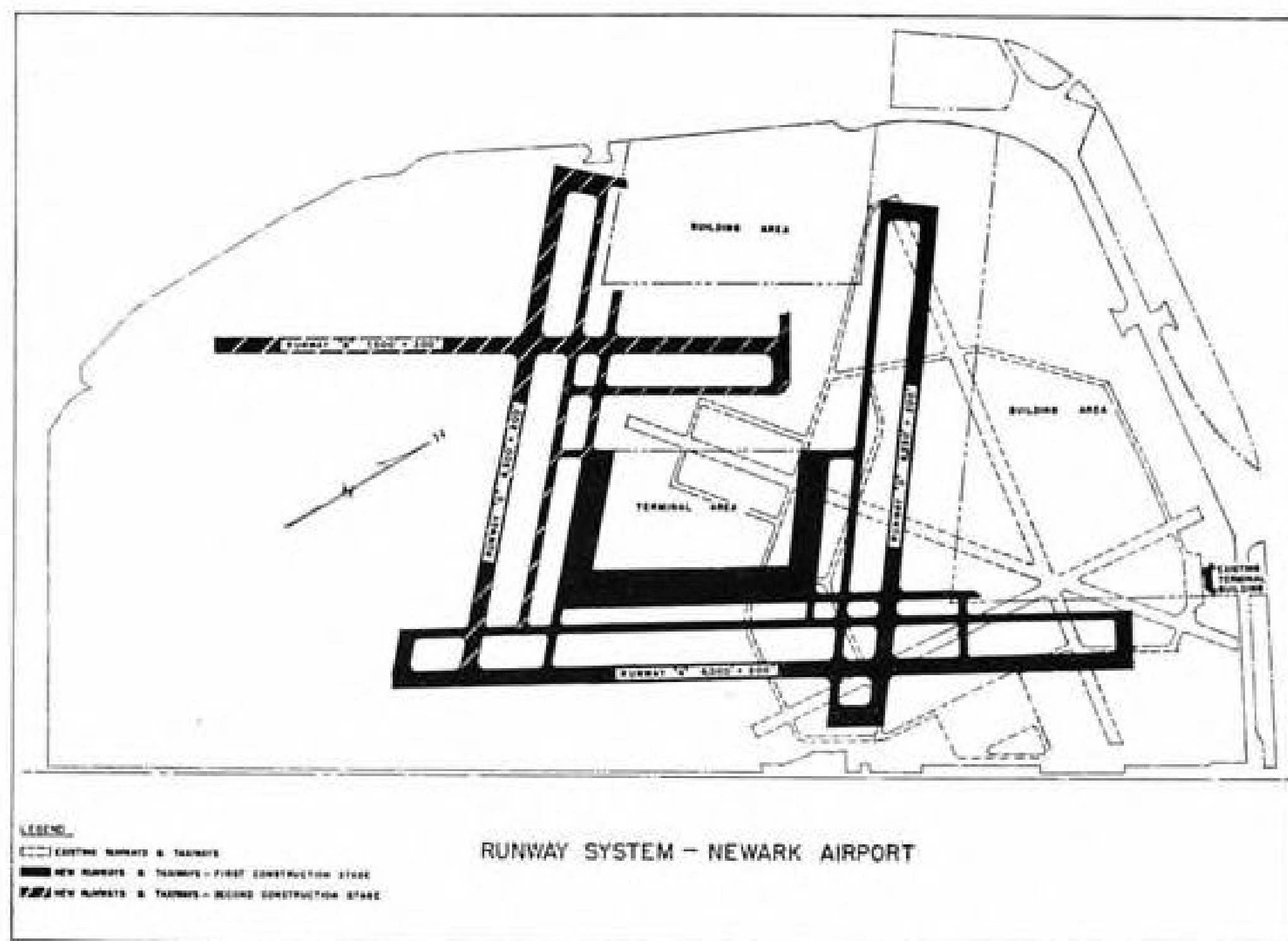
► **Mail Revenues**—Exact profit for 1948 cannot be determined until mail rate proceedings now pending before CAB are decided. Reported U. S. mail revenue for 1948 was \$33,396,000. Of this, \$23,849,000 is based on temporary and final rates which were in effect during the year.

The remainder represents an estimate of additional mail pay to be received from CAB—less an addition of \$1 million to the reserve against the estimated balance receivable.

Trippe recalled that in September, 1948, PAA became the first scheduled airline to institute low-cost coach service.

As a result, the number of passengers on the company's New York-Puerto Rico route trebled in five months; and the tourist flights were extended to Rio de Janeiro and Buenos Aires.

► **Aircoach to Europe**—The report reaffirmed PAA's support for coach service to Europe "so that American families of average means can visit the continent in the course of their customary two-week vacations." A tourist fare of \$225, or about 6.6 cents a mile, (compared to the regular \$350 New York-London rate) would be in line with tariffs presently available to Latin America and Honolulu, Trippe declared.



THE PORT AUTHORITY TOUCH AT NEWARK

After making studies and tests for a year and a half at Newark Airport, the Port of New York Authority has released this map of what the field eventually will be—four runways ranging from 6000 to 9000 feet long and capable of handling planes up to 150,000 lb. gross weight. Construction will pro-

ceed in stages so as not to interrupt traffic. Runways cost is estimated at about \$20 million. Work will start soon on the first runway, for which Civil Aeronautics Administration will put up \$1,075,000 of the cost. Existing runways eventually will be abandoned.

National and Pilots Fighting Again

Wrangle on November's back-to-work pact threatens carrier's financial comeback and interchange deals.

Another major crisis in National Airlines' relations with the Air Line Pilots Assn. may be in the making.

The company and union are again at odds over terms of the back-to-work agreement of Nov. 24, 1948, under which the pilots ended a 10-month strike—longest in airline history. Continued friction between management and the pilots could have far-reaching effects on NAL's financial comeback and its plans for strengthening its system through a broad program of equipment interchanges.

(From last November through April, 1949, National showed net profits aggregating about \$1.5 million to wipe out most of its losses during the strike. But the carrier's slack traffic season has now begun.)

► **Grievance Filed**—ALPA President David L. Behncke has accused National of dilatory tactics and procrastination in putting striking pilots back in NAL cockpits in accordance with the November settlement. The union recently filed its 20th grievance against National, charging the company with attempts to avoid compliance with the pact.

NAL retorted that ALPA is attempt-

ing to change the terms of the agreement and wants to usurp management's prerogatives and responsibilities. A company official described the union's latest grievances as "improper" and not subject to conciliation under the back-to-work pact.

ALPA asked replacement of the doctor selected by National to examine pilots seeking to return to active status following the strike. The doctor's actions, ALPA claimed, have been prejudicial against the returning pilots.

► **Stalling Alleged**—In another grievance, ALPA said that because of National's "stalling" there were, up to May 10, still 33 pilots who had not been placed on regular flying status. The back-to-work agreement of last November obviously has not been put into effect in good faith by the company, the union declared.

ALPA requested that direction of the return-to-flying program covering NAL's union pilots be removed from company control and turned over to a neutral person who had no previous connection with the National strike. The neutral director would be chosen by the National Mediation Board.

ALPA also wants NAL to pay the pilots a sum equal to the salary they would have earned "had the company complied with all provisions of last November's strike settlement agreement."

An arbitrator selected by the National Mediation Board will try to resolve the grievances. Pending return to work of all ALPA pilots, NMB is not expected to act on a petition by the National Pilots Assn. seeking to represent NAL's flight personnel. NPA includes former non-union pilots who flew for NAL during last year's strike.

► **Equipment Interchange Fight**—Meanwhile, ALPA and National are tilting over the issue of equipment interchanges. Ramifications of this fight are already being felt by other carriers.

Last month, the Civil Aeronautics Board approved for an indefinite period an equipment interchange agreement between Capital Airlines and NAL (AVIATION WEEK, May 23). Under terms of the pact, the carriers would operate through flights between cities north and west of Washington, D. C., on Capital's routes, and cities south of Washington on National's system.

Capital suffers from a traffic letdown in the winter and National in the summer. CAB found that the equipment interchange would enable both carriers to make more extensive utilization of their planes, and annual cutbacks in personnel resulting from traffic seasonality would be alleviated.

► **Trouble**—Soon after CAB gave its approval to this interchange, Capital Airlines' pilots threw a monkey wrench into the deal. They adopted a resolution stating that they will not participate in any way in the equipment interchange until all regular National Airlines pilots have returned to flying status in accordance with last November's back-to-work agreement between ALPA and NAL "and until NAL has ceased all efforts to harass their regular pilots."

The resolution added that Capital pilots will not participate in the interchange until an agreement has been reached between them and the regular National pilots to protect the rights of the two groups.

National is depending heavily on interchange agreements to combat the dismemberment proceeding which CAB instituted last fall. The probe is to determine whether NAL's routes should be transferred to other carriers.

► **Dismemberment Hearings**—Hearings in the dismemberment case were held last March, but after three weeks of testimony they were adjourned indefinitely when National announced an equipment interchange and stock sale agreement which (if CAB approves) would give Pan American Airways and W. R. Grace & Co. virtual control of

National. Under the interchange, PAA and Panagra planes would be chartered by NAL at Miami or New York and be operated by PAA and Panagra crews on National's routes between the two cities.

National has asked CAB to dismiss the dismemberment investigation, or defer it until a decision has been rendered on the equipment interchange and stock deal with Pan American and Panagra.

The agreements will substantially change and improve the air transport pattern in the areas served by NAL without the need for actual route transfers, consolidations or mergers, National officials contended. They added that the pacts, if approved, could accomplish the aims of the dismemberment investigation on an "infinitely more direct and practical basis," prevent a bitter and deadly battle for NAL's links, and relieve NAL of the heavy burden of fighting the dismemberment case.

Besides the Capital, PAA and Panagra agreements, NAL has submitted for CAB approval a pact providing for equipment interchange with Eastern at New Orleans.

► **ALPA Attitude**—The Air Line Pilots Assn. is vigorously opposed to principle of equipment interchanges. Presi-

dent Behncke contends they are unhealthy economically and from a safety standpoint. Both ALPA and the International Association of Machinists argued that the NAL-Capital agreement violates existing bargaining arrangements.

"Interchanges are hazardous because of variables in the instrumentation and controls within the cockpit and plane performance," Behncke asserts. "They would hopelessly snarl the airline pattern. They go beyond the aspects of added pilot burdens by adversely affecting maintenance. Ground personnel of one company would be less competent in maintaining the unfamiliar equipment of another company."

► **Safety No Problem**—CAB, in approving equipment interchanges between Delta Air Lines and TWA in 1947 and recently between NAL and Capital, denied there is anything inherently unsafe in such agreements. Both Capital and National have made plans for pilot training, including familiarization flights and acquaintance with airport data, weather information and navigation facilities over each other's routes.

They have also arranged to instruct their respective personnel in flight equipment adjustments, en route procedures and aircraft maintenance. In the Capital-National setup, Capital aircraft and crews will perform the interchange flying between Dec. 15 and May 15 of each year and National planes and crews during the six months following. In the TWA-Delta arrangement, pilots are not interchanged along with the aircraft.

► **Cockpits Similar**—In recommending approval of an American Airlines-Delta Air Lines DC-6 interchange at Dallas, a CAB examiner reported last month that cockpits of the two companies' planes are "substantially identical," with little variation in the instrumentation. "No difficulty should be encountered in training pilots and flight crews to operate the planes of the other carrier with safety."

Maintenance functions are frequently performed by carriers other than those owning the aircraft on which work is being done, the examiner continued. "American carries on maintenance at Boston not only for TWA's international DC-4s but on DC-3s, which AA no longer operates, and with respect to Constellations, which American never operated."

"At Phoenix, TWA performs maintenance for AA DC-4s and DC-6s, although TWA operates no DC-6s. All these facts lead to the conclusion that not only is the proposed interchange operation sound from a safety standpoint but it will give rise to fewer safety problems than those handled daily by almost every carrier in normal operations."



HEADS TACA

Francis H. Inge, Mobile, Ala., attorney, has been elected president and general counsel of TACA Airways, S.A., succeeding Paul Richter, who died recently in California (AVIATION WEEK, May 23). For the past two years Inge has been vice president, general counsel and a member of TACA's board of directors. TACA Airways, S.A., is a Panamanian corporation controlling airlines in Central and South America which make up the extensive local and international TACA Airways System. Waterman Steamship Corp. has controlled TACA since early 1947.

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CAB Sits Tight

Refuses Congressional
plea to defer nonsked
"death sentence."

Rejecting Congressional protests, the Civil Aeronautics Board has announced it will carry out its "death sentence" revision of the nonscheduled regulations.

As a result, large irregular airlines are scurrying to file requests for individual exemptions before June 20 to replace the blanket operating authority which CAB intends to withdraw on that date. ▶ **Replies to Senator**—CAB Chairman Joseph O'Connell disclosed the Board's decision in response to a letter from Sen. Edwin Johnson (D., Colo.), chairman of the Senate Interstate and Foreign Commerce Committee. Johnson had urged that the stringent new rules be held in abeyance until CAB completes action on the nonskeds' applications for certificates.

"We are unable to accept your suggestion, believing our announced program for handling the (nonskeds) problem is sound and that fulfillment of our statutory responsibilities requires that we adhere to it," O'Connell declared. "We feel that to do otherwise would be to condone flagrant violations of our regulations in the past and encourage disrespect for them in the future."

"The point should be made again that the revised regulation contemplates a continuation of operations heretofore legally authorized. Applicants for certificates will not, therefore, be put out of business by the new procedure."

▶ **Defense Aspects**—O'Connell discounted Congressional fears that the crackdown on large nonskeds is a threat to national defense. He told Sen. Johnson that few aircraft belonging to the irregulars are of strategic importance.

"For the most part, the planes consist of DC-3s and C-46s, with which our armed forces are already abundantly stocked. Four-engine aircraft operated by the nonskeds number not more than 25, many of which are leased. Even in the unlikely event that these carriers should cease operations altogether, these planes would not be lost to the civilian strategic reserve."

"Similarly, the total personnel involved is not more than 2200, many of whom are engaged in perfectly legal and legitimate pursuits either in air carrier operations or ground service activities which will continue regardless of the revised regulation." O'Connell did not discuss Johnson's suggestion that non-subsidized aircoach services might be considered a valuable yardstick to the economy and efficiency of operators.

▶ **Exemption Bids**—About 104 irregulars using transport-type equipment held effective letters of registration to operate under the general exemption as of June 1. And eleven of these had already filed for individual exemptions by that time.

Earlybirds included: Monarch Air Service, Chicago; Central Air Transport, Miami; Air Services, Inc., Miami Beach; Remmert-Werner, Inc., St. Louis; American Flyers, Fort Worth; Trans-Alaskan Airlines, Seattle; Royal Air Service, North Hollywood, Calif.; Scott Aero Services, Long Beach, Calif.; Continental Charters, Inc., Miami; Blatz Airlines, Los Angeles; and Kesterson, Inc., Knoxville.

Under the new regulations, large nonskeds must show their proposed service is required by the public. The Board will rigidly define the scope of individual exemptions and have power to suspend them without notice when it believes such action is warranted. Nonskeds denied individual exemptions will have to stop operations.

Meanwhile, these developments have marked the nonsked scene:

• **Proposed invasion** of the West Coast-Hawaii route by a Burbank, Calif., irregular which has been active on the transcontinental route has brought stiff protests from United Air Lines. The nonsked—Airplane Charter by Mercer—filed a tariff with CAB offering \$109 one-way fares and \$199 roundtrips starting June 9 between principal California cities and Honolulu. UAL and Pan American Airways charge \$160 one-way and \$288 roundtrip.

United complained that Mercer's fares (averaging 4.5 cents a mile one-way and 3.9 cents roundtrip) are unreasonably low, being 32 percent under certificated airline rates, 46 percent below average first-class boat fares and \$11 less than the lowest cabin fares on Matson Navigation Co.'s liners.

Last March, UAL noted, CAB was instrumental in having the certificated airlines' fares between the West Coast and Hawaii raised because the rate structure appeared "unduly low." And on Apr. 27, the Board told U.S. flag carriers it was opposed to lower fares in the Pacific area and to institution of cut-rate tourist services on certificated overseas routes "at this time."

• **Five uncertificated airlines** are now operating extensive intrastate services in California with high-capacity DC-3s and DC-4s—all having started since the first of the year. Most flights are over the Los Angeles-San Francisco link, but service is also provided to San Diego and Sacramento.

The blossoming cut-rate intrastate operations, which have plagued not only the certificated airlines but bus companies and railroads as well, presumably

are beyond CAB's jurisdiction. The California Public Utilities Commission and state legislature are eyeing the situation with possible new controls in mind.

• **Viking Air Lines**, which has been active on the transcontinental run since 1946, has deliberately violated the Civil Aeronautics Act, a CAB enforcement attorney declared in a recent brief to a Board examiner. The Burbank, Calif., company has conducted regular service in violation of the nonscheduled exemption and failed to report some flights to CAB, the attorney said in urging revocation of Viking's letter of registration.

Coincidentally with CAB's latest crackdown on large irregulars, Viking announced it had sold some of its DC-3s in Latin America (AVIATION WEEK, May 2). It has recently been operating leased DC-4s coast-to-coast.

Robinson Quits

C. S. Robinson, founder of Robinson Airlines, New York State feeder, has resigned as chairman of the board of directors because of disagreement with the board's policies. He also quit his posts as member of the board and member of the board's executive committee.

Bertram J. Miner, Binghamton, N. Y., banker, was elected temporary chairman of the board.

Coincidentally with the management change, the company reported that traffic reached a new high in May, when 3730 passengers were flown. RAL's April load factor of 44 percent was higher than that of any other feeder.

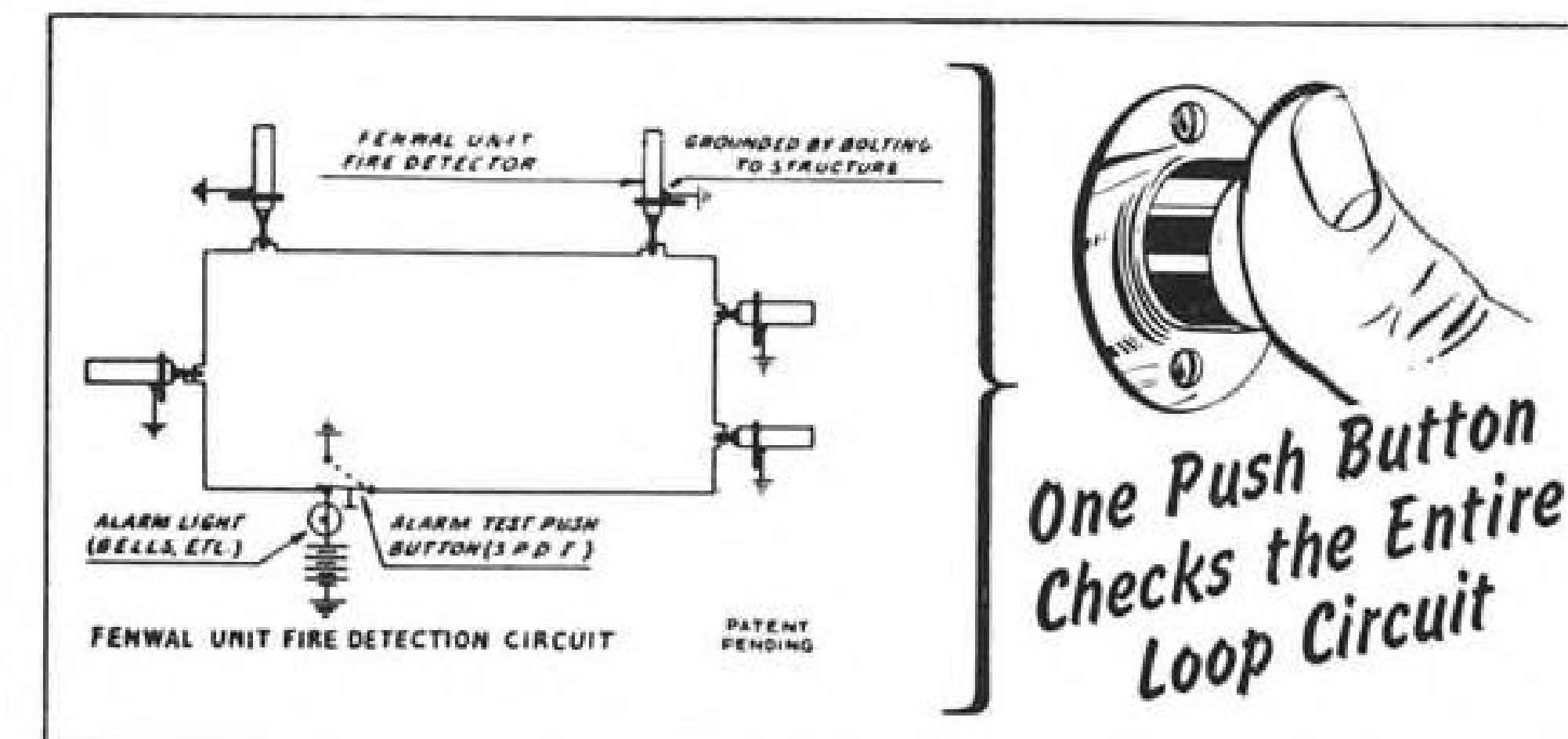
ICAO Standards Attacked by ATA

U.S. flag carriers are afraid their operations may become deeply entangled in the red tape accompanying standards and recommended practices adopted by the International Civil Aviation Organization.

The Air Transport Assn. has told Civil Aeronautics Board Chairman Joseph O'Connell that proposed ICAO standards for scheduled international services are too specific in detail. "Instead of setting forth only general principles of policy by which member states may establish national regulation, they have gone so far as to state specifically the items of first aid equipment to be carried in the first aid box and the number and type of fuses to be carried," the association said.

▶ **Bar to Progress**—"Seriousness of this form of international standard becomes apparent when the time period (two or three years) for promulgating, approving, adopting and implementing amendments to such international standards is considered in relation to progress in

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technological matters, operating practices and procedures of the air transport industry," ATA declared.

"It would appear that unless the international requirements are restricted to principles, the industry will be caught in a vicious circle of ICAO standards and requirements, U. S. Civil Air Regulations, and industry operating requirements, none of which will ever catch up with the others.

"The U. S. government, if morally bound by an international standard, will be extremely reluctant to make changes in its national regulations even though dictated by good operating practices and procedures of the industry, and will, thereby, unnecessarily prolong or perpetuate inefficient procedures by virtue of the international standards."

The Civil Aeronautics Board, through the Air Coordinating Committee, has advised ICAO that it disapproves a number of the proposed standards and practices covering scheduled international service. ACC is sympathetic with ATA's point of view but believes many of the difficulties foreseen by the U. S. carriers can and will be ironed out.

ALPA Lays Gander Crash to GCA

Controversy over the accuracy of GCA has developed during investigation of the non-fatal accident at Gander, Newfoundland, on the night of Mar. 2, when a TWA DC-4 carrying 24 passengers, struck the ground 1600 ft. short of the runway.

Chief critic of GCA procedures in general and the specific technique used to guide the TWA pilot at Gander is the Air Line Pilots Assn.

ALPA spokesman Donald Richwine of TWA charged that the Gander GCA did not warn Frank Saylor, pilot of the damaged TWA DC-4 that he was dangerously low just before the plane snapped a power line and hit the ground 1600 ft. short of the runway. Richwine also asked for Civil Aeronautics Board licensing of GCA operators and an investigation of the limitations of GCA equipment.

► **Below Glide Path**—Operators of the Gander GCA, maintained by Pan American Airways under a joint agreement with other U. S. and foreign airlines using the field, testified that they warned Saylor repeatedly that he was from 20 to 70 ft. below the glide path during his final approach and that he remained below the glide path during his entire approach. Gander control tower personnel confirmed the GCA operators' repeated warnings to Saylor. The GCA operators said they were not able to determine on their scope when the TWA DC-4 hit the power line, trees and ground 1600 ft. short of the

runway and were unaware of any mishap to the plane until after it landed.

The GCA glide path is 83 ft. above the wires at the point the DC-4 hit. The wires are 30 ft. above the ground which slopes down from the runway to the shores of Gander Lake and 15 ft. above the runway level. GCA operators testified they warned Saylor he was 50 ft. below the glide path less than a mile from the runway and the Angus-Easterline automatic recorder on GCA equipment showed the plane to be 88 ft. below the glide path in a sudden drop less than a mile from the runway. The recorder showed the plane was below the glide path from one mile out to the point of impact at 1600 ft. out.

► **Pilot Testifies**—Testimony by Pilot Frank Saylor revealed that he made a standard GCA approach to Gander with a weather forecast of 300 ft. ceiling, visibility of $\frac{3}{4}$ mile and freezing rain and fog. The DC-4 went into clouds at 2300 ft. and picked up heavy ice on the windshield. Alcohol was applied to de-ice the windshield but the equipment was defective and sprayed alcohol over pilot and co-pilot.

At an altimeter reading of 900 ft. (409 ft. above the ground) the DC-4 broke out of the cloud. Saylor said he could see the Bartow high intensity approach lights and the end of the runway through a small un-iced portion of the windshield. He did not use the emergency clear vision panel to improve his visibility because it was placarded against operation when gear and flaps were down because of anticipated carbon monoxide danger.

► **Partly Contact**—Because of the poor forward visibility Saylor elected to use GCA assistance while trying to continue the landing under contact conditions. He testified that he was flying part contact and partly on instruments during the last four miles of his approach. Usual procedure at Gander for pilots breaking out of an overcast with an iced windshield is to circle the field until the ice melts.

Saylor said he noticed his airspeed drop from 130 mph to 110 mph and felt the right wing dip and stall. He applied full power, felt the plane hit the ground and then become airborne again. He continued on to land on the runway with major damage to the plane. The DC-4 nose wheel broke the power line 1600 ft. from the end of the runway; then both wings and gear sheared off trees for 300 ft. The right wing hit a mound of dirt and crumpled upward just before the plane again became airborne. Saylor and his co-pilot testified that neither were aware of the power line's location.

Saylor said he was sure that he could have completed a normal landing if he had not relied on GCA after he broke out of the overcast.

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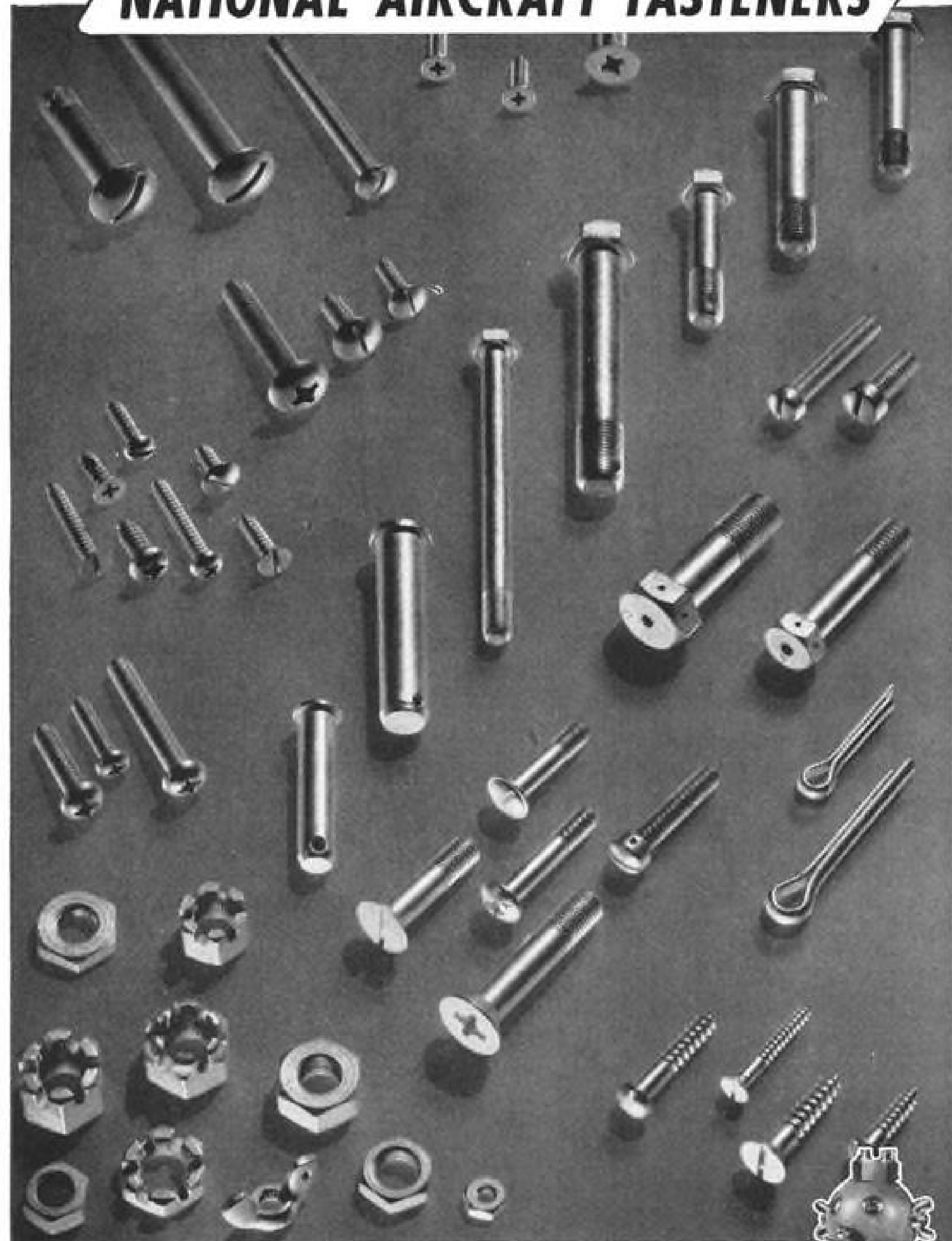
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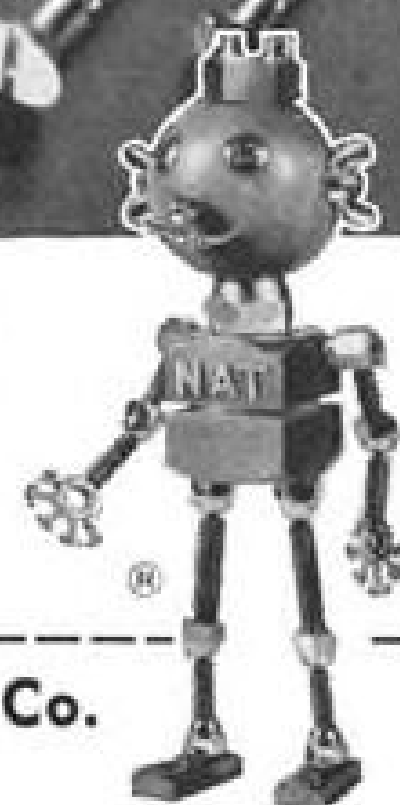


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IATA Conference

(McGraw-Hill World News)

BURGENSTOCK, Switzerland—International Air Transport Assn.'s third annual technical conference ended here after 10 days, with more than 80 items figuring on the agenda.

Subjects on which agreement was sought included operational fuel requirements for prescribing minimum fuel reserves; performance requirements for Category A aircraft; and standardization issues, such as approach landing lights, position lights as well as aircraft lights.

More than 100 delegates from a score of companies conducted a symposium on the DC-6 with representatives of the manufacturers. Views and information also were exchanged on possible use of helicopters as a link between airports and urban centers.

SHORTLINES

► **Alaska Airlines**—Has received CAB authorization to make ten roundtrip passenger flights between the U. S. and Israel during the period from June through October.

► **American**—Has flown 36,000 families and 76,000 individuals under its first-of-the-week family fare plan during the past eight months. An AA survey disclosed that 64 percent of the family group passengers would not have traveled by air but for the fare reductions. American wants to extend the plan to Mar. 30, 1950.

► **Braniff**—W. T. Maxfield has become director of maintenance and engineering, replacing R. H. Van Horn.

► **BOAC**—Has increased its trans-Atlantic service from six to seven roundtrips weekly.

► **Coastal Air Lines**—Has received a CAB exemption to make a DC-4 passenger flight from New York to Israel. CAL is a large irregular carrier based at Newark.

► **Colonial**—Lost \$316,000 between Mar. 1, 1948, and Apr. 30, 1949, on its routes from New York and Washington to Bermuda and has requested higher mail pay.

► **Flying Tiger Line**—Expects to show a profit for the fiscal year ending June 30. Company was in the black for the last half of 1948.

► **Mid-Continent**—Reports \$34,202 net profit in April against \$14,127 in the same month last year. Operating revenues increased 7 percent, and freight traffic hit an all-time high. . . . A CAB examiner has recommended that MCA be denied an alternate route between Kansas City and New Orleans via Springfield, Mo., Little Rock and El

Dorado, Ark., and Monroe and Baton Rouge, La.

► **National**—Showed a \$494,306 net profit in April, bringing its earnings since Nov. 1, 1948, to \$1,498,070.

► **Pan American**—Has received CAB authorization to consolidate several route segments from U. S. gateways to points in Latin America into one linear route, making possible time-saving nonstop services.

► **Southern Airways**—Inauguration of feeder service was postponed from June 1 to June 10 because of delays in receiving radio transmitters and receivers for stations.

► **Trans-Caribbean**—Has been denied CAB exemption to provide regularly-scheduled coach-type flights between New York and Puerto Rico pending a Board decision on route certificate applications contemplating such service.

► **TWA**—Traffic over domestic routes during the Memorial Day weekend was the heaviest in history, exceeding last year's level by 11 percent. . . . company carried a capacity 38-passenger load out of New York on its first Stratoliner coach flight to Pittsburgh and Chicago, June 1. . . . W. L. Trimble has been named director of operations-Europe, replacing E. T. Bolton, who resigned to become vice president-operations of Philippine Airlines.

CAB SCHEDULE

June 13—Oral argument on CAB's tentative decision in the air freight route case. (Docket 810 et al)

June 13—Resumption of hearings in reopened Hawaiian case. (Docket 851 et al)

June 13—Prehearing conference on extension of Expreso Aero Inter-Americano's Havana-Miami foreign air carrier permit. (Docket 3717)

June 15—Hearing on foreign air carrier permit application of Linea Aeropostal Venezolana. (Docket 3751)

June 20—Resumption of hearings in southern transcontinental route case. Postponed from June 14. (Docket 1102 et al)

June 20—Hearing on Purdue Aeronautics Corp.'s lightplane route application. (Docket 3713)

June 20—Hearing on Carco Air Service's lightplane route application. (Docket 3629)

June 22—Prehearing conference in air freight rate case on accumulation, assembly and distribution tariffs. (Docket 1705 et al)

June 27—Hearing on renewal of Southwest Airways' feeder certificate and suspension of United Air Lines' service at four California points. Postponed from June 20. (Docket 3718)

June 28—Hearing in Val-Air Lines and Trans-Texas Airways route case. Postponed from June 14. (Dockets 3645, 3646 and 3367)

July 6—Resumption of hearings on seasonal service to Lake Tahoe. (Docket 3623)

July 18—Hearing on Hughes Tool Co. control of TWA. (Docket 2796)

July 18—Hearing on renewal of Pioneer Air Lines' feeder certificate and suspension of service at points on routes of Braniff, Continental and American. (Docket 3719)

Sept. 26—Hearing on Seaboard & Western and Transocean Air Lines applications for all-cargo route certificates between the U. S., Europe and the Middle East. (Dockets 3041 and 3318)

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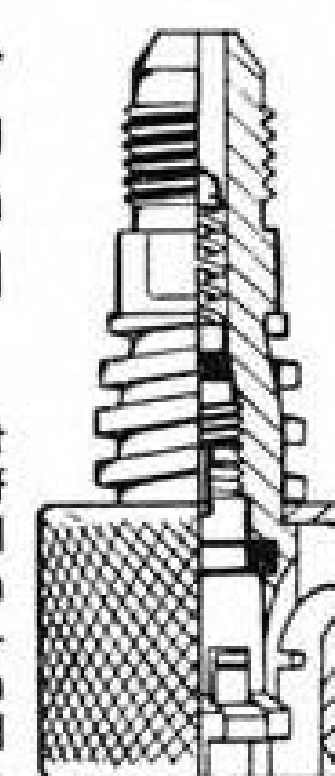
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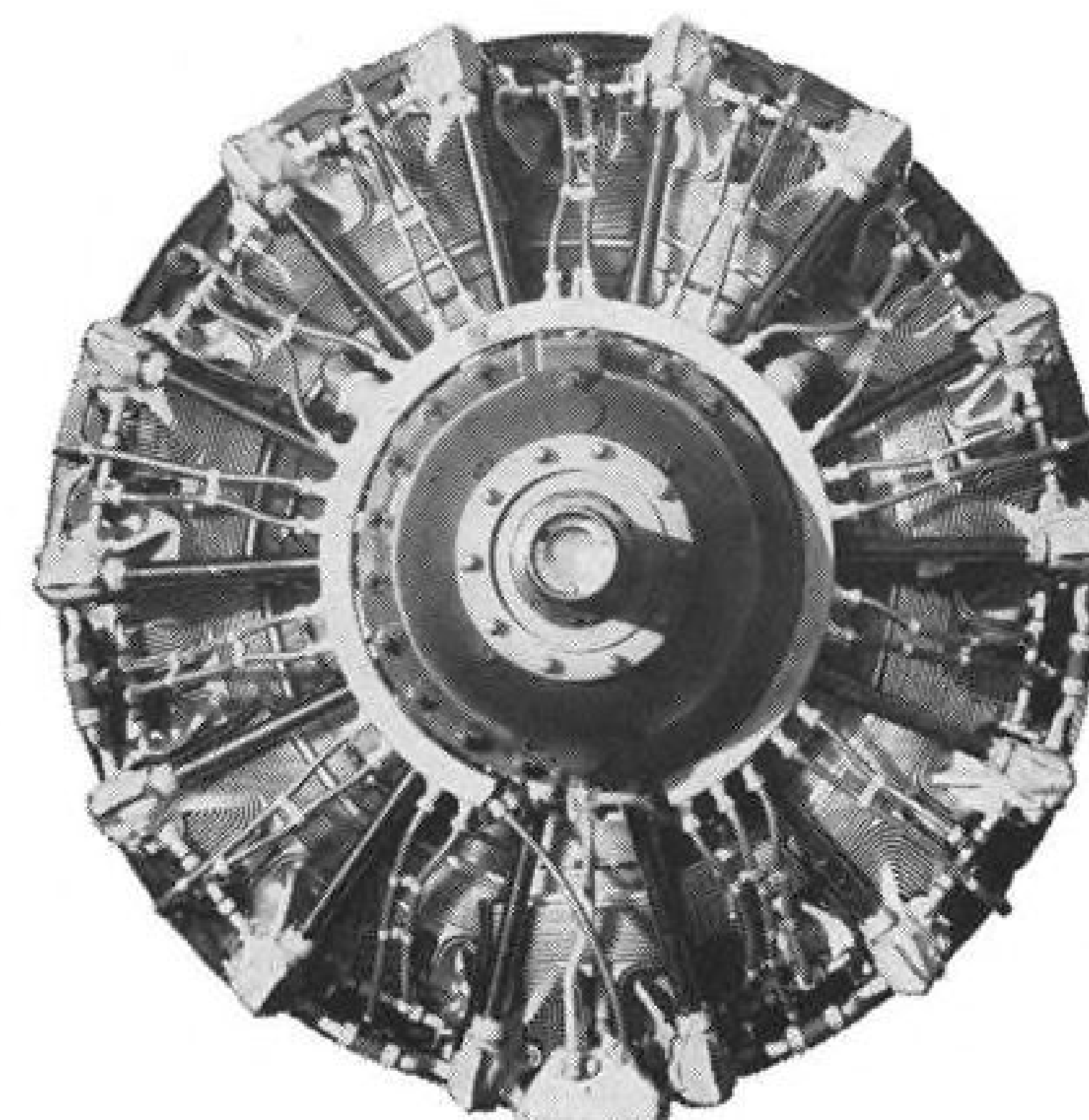
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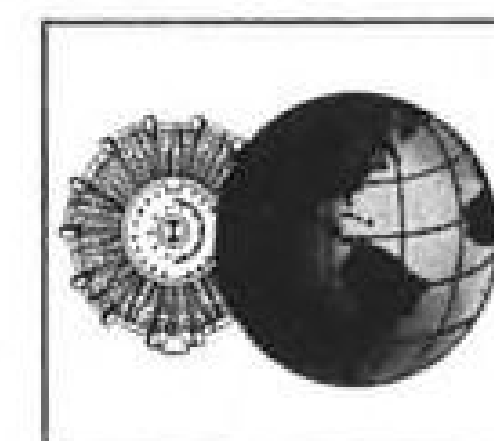
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New Books

"Seaplane Flying and Operations," by Robert S. Fogg, W. D. Strohmeier and Daniell J. Brimm, Jr., with foreword by Admiral Richard E. Byrd. Handbook covers every phase of seaplane handling, including the art of taxiing and sailing, takeoff, flying cross-country, landing and docking. It also treats inspection and maintenance of the craft, and commercial operation of a seaplane base. 218 pages, published by Pitman Publishing Corp., 2 West 45 St., N. Y. 19, N. Y. Price \$3.75.

"Airports and Air Traffic," by John Walter Wood, gives principles for airport planning, covers types of air traffic, airport requirements and pertinent aviation statistics. Published by Coward-McCann, Inc., 2 West 45 St., N. Y. 19, N. Y. Price \$3.75.

"The House of Goodyear," by Hugh Allen, the story of the rubber industry in America, published by Corway & Gross Co., 1771 East 25 St., Cleveland 14, Ohio. Price \$3.

"Flight Instructor," by Charles A. Zweng, 1949 edition of this paper-covered training manual, published by Pan American Navigation Service, 12021 Ventura Blvd., North Hollywood, Calif. 335 pages, illustrated, price \$3.

"Power Capacitors," by Ralph E. Marbury, first in a series of Westinghouse-McGraw-Hill Engineering Books for Industry, covering use of capacitors on power circuits. Published by McGraw-Hill Book Co., Inc., 330 W. 42 St., New York 19, N. Y. Price \$3.50.

Education

Cal-Aero Technical Institute—Curriculum in aeronautical engineering has been accredited by the Engineers' Council for Professional Development.

Trade Literature

Pamphlets, describing such American Chemical Paint Co. products as Alodine, Duridine, Thermoil Granodine, Deoxidine, Lithoform and Rodine, and applications of each to industry, available upon request to American Chemical Paint Co., Ambler, Pa.

"Catalogue No. 1," containing descriptive abstracts of over 200 translations of German wartime scientific and industrial research reports, available upon request on firm or organization stationery to Consultants Bureau, 153 W. 33 St., New York 1, N. Y.

ADVERTISERS IN THIS ISSUE

AVIATION WEEK—JUNE 13, 1949

Adams-Rite Mfg. Co.	40
Agency—The Shaw Co.	
Aerotec Corporation, The	27
Agency—The Harry P. Bridge Co.	
Aircraft Radio Corp.	47
Agency—Burke Dowling Adams Adv.	
Albertson & Co., Inc.	38
Agency—E. W. Sann & Associates	
All American Airways	49
Agency—Burke Dowling Adams Adv.	
Ambrose Aviation Co., Frank	48
American Airmotive Corp.	27
Agency—Houck & Co. of Florida	
American Chemical Paint Co.	49
Agency—May Advertising Co.	
Anti-Corrosive Metal Products Co., Inc.	47
Agency—Woodard & Fris, Inc.	
Beech Aircraft Corp.	Fourth Cover
Agency—Erwin, Wasey & Co., Inc.	
B. G. Corporation, The	Front Cover
Agency—Albert Frank-Guenther Law, Inc.	
Cities Service Oil Co.	10
Agency—Ellington & Co., Inc.	
Dayton Aircraft Products, Inc.	23
Agency—Kircher, Helton & Collett, Inc.	
Fenwal, Incorporated	45
Agency—James Thomas Chirurg Co.	
Friez Instrument Div. of Bendix Aviation Corp.	20
Agency—MacManus, John & Adams, Inc.	
Goodrich Co., The B. F.	3
Agency—Batten, Barton, Durstine & Osborn, Inc.	
Indiana Gear Works	53
Agency—A. L. Perkins & Co.	
Jack & Heintz Precision Industries, Inc.	32
Agency—Fuller & Smith & Ross, Inc.	
Johns-Manville Corp.	46
Agency—J. Walter Thompson Co.	
Kollsman Instrument Corp.	46
Agency—Erwin, Wasey & Co., Inc.	
Lewis Engineering Co., The	46
McGraw-Hill Book Co., Inc.	44
National Aeronautical Corp.	8
Agency—J. Branch Briggs Adv.	
National Screw & Mfg. Co., The	48
Agency—Fuller & Smith & Ross, Inc.	
Pacific Div. of Bendix Aviation Corp.	35
Agency—The Shaw Company	
Packard Electric Div., G.M.C.	36
Agency—Campbell-Ewald Company	
Phillips Petroleum Co.	5
Agency—Lambert & Feasley, Inc.	
Revere Corp. of America	8
Searchlight Section	50, 51, 52
Socony-Vacuum Oil Co., Inc.	19
Agency—Compton Advertising, Inc.	
Sperry Gyroscope Company	Third Cover
Agency—Charles Dallas Reach Co., Inc.	
Surface Combustion Corp.	6
Agency—Odiorne Industrial Adv.	
Thompson Products, Inc.	Second Cover
Agency—The Griswold-Eshleman Co.	
Titeflex, Inc.	4
Agency—Sykes Advertising, Inc.	
U. S. Steel Supply Co.	24
Agency—Batten, Barton, Durstine & Osborn, Inc.	
Waldes Kohinoor, Inc.	31
Agency—Grey Adv. Agency, Inc.	
Westinghouse Electric Corp.	30
Agency—Fuller & Smith & Ross, Inc.	
Whittaker Co., Ltd., Wm. R.	26
Agency—The McCarty Company	
Wiggins Oil Tool Co., Inc., E. B.	49
Agency—General Adv. Agency, Inc.	



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EDITORIAL

More Shifts at CAA

Administrator Del Rentzel has been in charge of the overstuffed, unwieldy, politically-ridden Civil Aeronautics Administration for about a year. During most of that time the big government agency has been stirred into a continual turmoil both in Washington and in the field, the like of which has never been seen since the Civil Aeronautics Act was passed in 1938.

Prospects are that seething and unrest will continue for several more months, at least, as lower echelon changes are made. But top executive shifts with few exceptions, now appear to be crystallizing, under announcements made last week.

Advancement of Donald W. Nyrop from executive assistant to deputy administrator for operations, definitely puts him in CAA's No. 2 spot. Fred B. Lee, the other deputy administrator, is now assigned to "coordinate planning of Washington office programs and evaluation of regional performance."

Edward M. Sturhahn, who has been director of business management, is being named executive assistant to Rentzel, Nyrop's previous position.

Appointment of Capt. Charles F. Horne as director of federal airways, replacing William E. Kline, puts a positive advocate of GCA as top man at airways, and this may mean a much stronger CAA leaning toward this type of landing aid, as opposed to CAA's traditional staunch support of the ILS. Horne had been Rentzel's special assistant on air navigation problems, and is author of a Navy report favoring GCA.

The new international region created by Rentzel and headed by Al Koch corresponds in many respects to the old foreign operations office, which Koch at one time headed under Administrator T. P. Wright.

Complaints about variance in regional technical decisions have been answered by a decision to put representatives from the Washington technical services office on regional boards for approval of new aircraft in an effort to get greater uniformity of engineering rulings in the various regions.

Admittedly, the Rentzel upheaval is the most drastic that CAA has ever seen. If the greater efficiency long demanded by the aviation industry in CAA can be attained by this shakeup, it will have been justified.

AVIATION WEEK will watch Mr. Rentzel and CAA closely in coming months, wishing success for both. The Administrator has had to fight an unusually lush crop of rumors, even for CAA, ever since he assumed office. We feel that he should fight them more valiantly. For either the Administrator or AVIATION WEEK to continue to ignore their existence would be futile. Both know they exist. This situation need not continue.

The Administrator must set out to prove himself to be as staunch a friend of all other branches of aviation as of

the scheduled airlines whence he came. He knows about the rumors of "international deals" in equipment, and should answer them fully, to set them at rest. We feel he did not meet this issue squarely and completely in earlier statements. Certainly he must be making every effort not to be tagged as favoring any particular commercial aviation service organization, or any manufacturer of equipment. He must guard strenuously against using for CAA employees who are on the payroll of the airlines' wholly owned communications company, Aeronautical Radio, Inc., of which he was formerly president. Until Mr. Rentzel does satisfactorily dispose of such reports, once and for all, he will be working against powerful and unnecessary odds. We hope he destroys the rumors once and for all. CAA and U. S. aviation need a strong administrator of civil aeronautics and perhaps Mr. Rentzel will prove to be that man. We hope so.

Mr. Johnson Reconsiders

Louis Johnson, Secretary of Defense, last week rescinded the notorious "Consolidation Directive No. 1" of Apr. 14, which gave notice that all information officially released from the Pentagon would thereafter be screened not only in the interest of national security, but also for "policy and propriety."

AVIATION WEEK, on this page May 2, deplored this new outcropping of censorship in an editorial, "Mr. Johnson's news policy bogs down."

According to William Frye, Mr. Johnson's public relations director, announcements now will be covered by the "existing security review regulations."

We recommend Mr. Johnson on reconsidering a dangerous official decision, and we hope several other alarming indications of a strangulation of public information can be eliminated in similar decisive fashion.

Dr. Compton Appointed

With election of Dr. Karl T. Compton as a director of McGraw-Hill Publishing Co., AVIATION WEEK welcomes the counsel of a third outstanding advisor well known to aviation.

Dr. Compton is chairman of the Research & Development Board of the National Military Establishment, and chairman of the corporation of the Massachusetts Institute of Technology. Until recently, he was president of M.I.T.

Already among AVIATION WEEK's consultants were Dr. Jerome Hunsaker, head of the department of aeronautical engineering of M.I.T., and Eugene Wilson, now chairman of the board of the Aircraft Industries Assn., and formerly chief of staff to the late Rear Admiral Joseph M. Reeves. For years, Mr. Wilson was president and vice chairman of United Aircraft Corp.

ROBERT H. WOOD

1948

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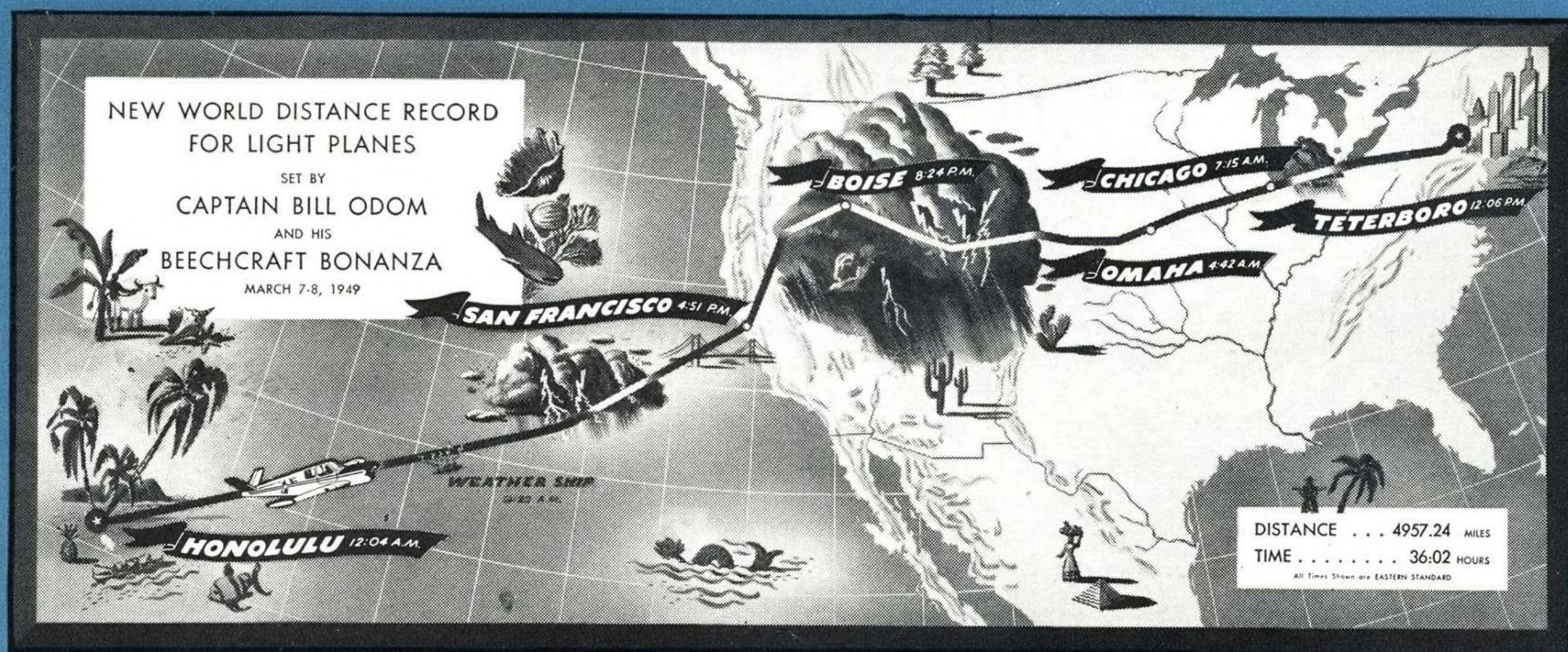
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