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## PROCEEDINGS AND DEBATES

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The Clerk read as follows:

For the acquisition of land in the vicinity of West Point, N. Y., as authorized by the act approved March 3, 1931 (46 Stat. 1491), \$150,000, and such sum, in conjunction with the appropriation of \$431,000 for a like purpose, contained in the War Department Appropriation Act for the fiscal year 1937, without regard to the proviso attached to such former appropriation, shall be available solely for the acquisition of the tracts of land designated as priorities one to nine, both inclusive, on the map on file in the office of the Quartermaster General, designated as "Map 'C', tract locator", and dated June 22, 1936. Such part of such act of March 3, 1931, as authorizes the acquisition of a larger area or any other area than as embraced by the priorities herein mentioned is hereby repealed.

Mr. HILL of Alabama. Mr. Chairman, I make a point of order against the language starting in line 4, page 28, beginning with the words "Such part" and ending with the words "is hereby repealed", in line 7, page 28.

Mr. SNYDER of Pennsylvania. Mr. Chairman, I concede the point of order.

The CHAIRMAN. That is obviously legislation on an appropriation bill, and the point of order is sustained.

The Clerk read as follows:

For acquisition, at a cost not to exceed \$1, of a site in the eastern central section of the State of Mississippi of such area as may be considered adequate for National Guard training purposes, \$1, and the Secretary of War is authorized, in behalf of the United States, to accept title in fee simple to such property as may be thus acquired.

Mr. HILL of Alabama. Mr. Chairman, I raise a point of order against the paragraph. It is obviously legislation on an appropriation bill and contrary to rule XXI.

Mr. SNYDER of Pennsylvania. Mr. Chairman, I concede the point of order.

The CHAIRMAN. The point of order is sustained.

The Clerk read as follows:

AIR CORPS  
AIR CORPS, ARMY

For creating, maintaining, and operating at established flying schools and balloon schools courses of instruction for officers, students, and enlisted men, including cost of equipment and supplies necessary for instruction, purchase of tools, equipment, materials, machines, textbooks, books of reference, scientific and professional papers, instruments, and materials for theoretical and practical instruction; for maintenance, repair, storage, and operation of airships, war balloons, and other aerial machines, including instruments, materials, gas plants, hangars, and repair shops, and appliances of every sort and description necessary for the operation, construction, or equipment of all types of aircraft, and all necessary spare parts and equipment connected therewith and the establishment of landing and take-off runways; for purchase of supplies for securing, developing, printing, and reproducing photographs in connection with aerial photography; improvement, equipment, maintenance, and operation of plants for testing and experimental work, and procuring and introducing water, electric light and power, gas, and sewerage, including maintenance, operation, and repair of such utilities at such plants; for the procurement of helium gas; for travel of officers of the Air Corps by air in connection with the administration of this appropriation, including the transportation of new aircraft from factory to first destination; salaries and wages of civilian employees as may be necessary; transportation of materials in connection with consolidation of Air Corps activities; experimental investigations and purchase and development of new types of airplanes, autogyros, and balloons, accessories thereto, and aviation engines, including plans, drawings, and specifications thereof, and the purchase of letters patent, applications for letters patent, and licenses under letters patent and applications for letters patent; for the purchase, manufacture, and construction of airplanes and balloons, including instruments and appliances of every sort and description necessary for the operation, construction (airplanes and balloons), or equipment of all types of aircraft, and all necessary spare parts and equipment connected therewith; for the marking of military airways where the purchase of land is not involved; for the purchase, manufacture, and issue of special clothing, wearing apparel, and similar equipment for aviation purposes; for all necessary expenses connected with the sale or disposal of surplus or obsolete aeronautical equipment, and the rental of buildings, and other facilities for the handling or storage of such equipment; for the services of not more than four consulting engineers at experimental stations of the Air Corps as the Secretary of War may deem necessary, at rates of pay to be fixed by him not to exceed \$50 a day for not exceeding 50 days each and necessary traveling expenses; purchase of special apparatus and appliances, repairs, and replacements of same used in connection with special scientific medical research in the Air Corps; for maintenance and operation of such Air Corps printing plants outside of the District of Columbia as may be authorized in accordance with law; for publications, station libraries, special furniture, supplies and equipment for offices, shops, and laboratories; for special services, including the salvaging of wrecked aircraft; for settlement of claims (not exceeding \$250 each)

for damage to persons and private property resulting from the operation of aircraft at home and abroad when each claim is substantiated by a survey report of a board of officers appointed by the commanding officer of the nearest aviation post and approved by the Chief of Air Corps and the Secretary of War, \$60,500,000, of which \$10,669,786 shall be available under the appropriation "Air Corps, Army, 1937", for payments under contracts for the procurement of new airplanes and of equipment, spare parts, and accessories for airplanes, as authorized by said appropriation: *Provided*, That \$10,000 shall be transferred to and made available to the Bureau of Mines on July 1, 1937, for supplying helium: *Provided further*, That in addition to the amounts herein appropriated the Chief of the Air Corps, when authorized by the Secretary of War, may enter into contracts prior to July 1, 1938, for the procurement of new airplanes and for the procurement of equipment, spare parts, and accessories for airplanes to an amount not in excess of \$17,245,300, and his action in so doing shall be deemed a contractual obligation of the Federal Government for the payment of the cost thereof: *Provided further*, That of the amount herein appropriated and the amount herein authorized for contractual obligation not less than \$33,756,561 (exclusive of \$10,669,786 for payment of the obligations incurred under the above-mentioned contract authorization for the fiscal year 1937) shall be applied to the procurement of new airplanes and their equipment and accessories, of which amount of \$33,756,561 not less than \$26,262,760 shall be applied to the procurement of combat airplanes and their equipment and accessories: *Provided further*, That no part of this or any other appropriation contained in this act shall be available for any expense incident to the use of Crissy Field, Calif., as an air station: *Provided further*, That no available appropriation shall be used upon lighter-than-air craft, other than balloons, not in condition for safe operation on June 30, 1937, or that may become in such condition prior to July 1, 1938: *Provided further*, That the sum of \$56,060 of the appropriation for Air Corps, Army, fiscal year 1934, and the sum of \$236,310 of the appropriation for Air Corps, Army, fiscal year 1935, shall remain available until June 30, 1938, for the payment of obligations incurred under contracts executed prior to July 1, 1935.

Mr. HARTER. Mr. Chairman, I make a point of order against the language on page 37, beginning in line 22, all of lines 23 and 24, and that part of line 1 on page 38 ending with the semicolon after the figures "1938."

Mr. SNYDER of Pennsylvania. Mr. Chairman, I concede the point of order. We will offer an amendment later on.

The CHAIRMAN. The point of order is sustained.

Mr. SABATH. Mr. Chairman, I move to strike out the last word.

Mr. Chairman, I was amazed a few minutes ago when the gentleman from Texas stated that he deplored the condition of our various military establishments. We have appropriated nearly five times as much for the War and Navy Departments this year as we did 30 years ago, and I cannot understand why all the departments cannot be kept up in view of the tremendous amount of money that has been appropriated.

Mr. Chairman, I ask unanimous consent to include in my remarks a table showing the expenditures for the Army and Navy from 1907 to the present time.

The CHAIRMAN. Without objection, it is so ordered.

There was no objection.

Mr. SABATH. Mr. Chairman, I call attention to the fact that in 1907 we appropriated for the War Department \$122,000,000 and for the Navy Department \$97,000,000. Today we are appropriating under this provision \$50,000,000 for the Air Corps and, as the gentleman from Mississippi stated, there are a great many other items in the bill which will swell this amount to approximately \$80,000,000.

Mr. McFARLANE. \$120,000,000.

Mr. SABATH. The gentleman from Texas informs me it will reach \$120,000,000. That is more than we appropriated for the entire Army and for the entire Navy 30 years ago. I concede that the population of the United States has increased perhaps 50 or 51 percent, but the expenditures of the War and Navy Departments have increased nearly 500 percent.

We are appropriating a tremendous sum for the Air Corps. Personally I do not object to the appropriation if economy is practiced and if the money is properly expended. However, I have information that millions and millions are being wasted, and I shall call upon the chairman of the Military Affairs Committee in a minute or so for information. I know something about the Air Corps as it existed during the war. I know that for 6 months after the declaration of war a certain group of men designated in the War Department to look

after the welfare of the Nation played around in order to give a combination of men or interests the absolute control of the industry to the detriment of our Nation.

[Here the gavel fell.]

Mr. SABATH. Mr. Chairman, I ask unanimous consent to proceed for 5 additional minutes.

The CHAIRMAN. Is there objection to the request of the gentleman from Illinois?

Mr. ANDREWS. Mr. Chairman, I object.

Mr. SABATH. Mr. Chairman, I ask unanimous consent to proceed for 2 additional minutes.

The CHAIRMAN. Is there objection to the request of the gentleman from Illinois?

Mr. ANDREWS. Mr. Chairman, I object.

Mr. WILCOX. Mr. Chairman, I offer an amendment.

The Clerk read as follows:

Amendment offered by Mr. WILCOX: Page 37, lines 16 to 18, inclusive, strike out the words "of which amount of \$33,756,561 not less than \$26,262,760 shall be applied to the procurement of combat airplanes and their equipment and accessories."

Mr. WILCOX. Mr. Chairman, the amendment I have offered eliminates from this section an unnecessary restriction upon the purchase of airplanes. The appropriation is for the sum of \$33,756,561 for the purchase of new airplanes, their equipment and accessories. The clause which I have offered an amendment to strike out provides that of this sum not less than \$26,262,760 shall be spent for combat airplanes with their accessories and equipment.

Mr. Chairman, I am prompted to offer the amendment for two reasons: The chairman of the Subcommittee on Appropriations in his presentation of the bill yesterday served notice upon the House and upon the country that no part of this appropriation would be used to purchase any more of the larger types of bombing airplanes. That is a declaration of policy by the Appropriations Committee which is in conflict with the desire and the policy of the Air Corps.

General Westover, in his testimony before the subcommittee, emphasized the fact that we have just begun the development of this large-type airplane; that they have great hope for its future in the Air Corps; and that they expect to continue the program. It is hoped, and even expected, that present experiments with the 4-motor bombers will demonstrate that they are not only more efficient but actually more economical than their equivalent in smaller types of planes.

The committee has sought through its chairman to serve notice upon the House and upon the Congress that no more of that type of plane is to be purchased. To reach such a conclusion at this stage of the experiment would be foolish in the extreme. Only four of the planes have been delivered, and no one now knows how successful they may prove to be.

I am also moved to ask that this clause be stricken for the reason the words "combat plane" have a distinct meaning in Army circles. To you and me a "combat plane" means any sort of fighting plane, but in Army circles it is sometimes given a different meaning; there are various types of plane, one type being referred to as a "combat plane." General Westover, in his testimony before the committee, listed certain types of plane as pursuit, bombardment, observation, attack, and combat.

Under this appropriation as worded, \$26,000,000 out of the \$33,000,000 would have to be used for the purchase of just one type of plane, if this designation of "combat plane" were accepted by those who purchase for the Army as meaning a particular type. I do not think Congress intends this. I do not think the committee intends it. However, when you limit the appropriation to combat planes you use a term used by General Westover to designate a particular type of plane. Such a limitation is not necessary in this appropriation. If we strike out this language, the provision will then read that there is appropriated the sum of \$33,000,000 plus for the procurement of new airplanes, their equipment and accessories. I submit this is all that is necessary. This gives the War Department free rein in the purchase of airplanes to purchase whatever number they may wish of bombardment planes, whatever number they may wish of

pursuit planes, and whatever number they may wish of the other types. However, when we undertake to limit it by the use of the words "combat planes" I am sure the committee did not intend it, and I am equally sure that the House does not mean to limit the Department to the purchase of one type, but I fear that it will be construed to mean that \$26,000,000 out of the \$33,000,000 must be used for the purchase of one particular type of plane.

Now I offer this amendment for the purpose of clarifying the record and placing the legislative construction of the House upon the words used. If "combat planes" means all fighting airplanes, including all types of bombers, attack, observation, pursuit, and so on, then this amendment is not necessary. But I do not want to see the House pass a bill appropriating a large sum of money for the purchase of necessary airplanes only to have someone in the War Department contend that the major portion of the sum must be spent for only one type of plane.

[Here the gavel fell.]

Mr. SNYDER of Pennsylvania. Mr. Chairman, I rise in opposition to the amendment.

Mr. Chairman, I shall start by referring to the last statement the gentleman made, that the \$26,000,000 would have to be used for one particular type of airplane. I agree that the gentleman is sincere, but his conclusion happens to be wrong. "Combat planes", as here used and administered, means any plane except cargo, transport, or primary training planes. Planes of other types come under the head of "combat."

With reference to what the gentleman stated as the policy advocated by this committee, I think he had reference to what I stated yesterday, and I read from the CONGRESSIONAL RECORD at page 5193:

There has been no policy established in any quarter, so far as I am advised. I merely stated in the course of my remarks that it was my personal view that it was unwise to continue to invest in large airplanes such as the four-engine bomber which was flown here a short time ago for our inspection.

I did not bring the committee into the matter at all.

Mr. WILCOX. If the gentleman will read his own remarks on the next page, he will see he made the statement that no part of this appropriation could be used for the purchase of any airplane having more than two motors. The gentleman stated that in his remarks and mentions in there a specific limitation.

Mr. SNYDER of Pennsylvania. I meant to convey by that, and thought I had made myself clear, that there is no money in this bill for four-engine planes, and the Department asked for no money for four-engine planes.

Mr. WILCOX. Will the gentleman yield to me further?

Mr. SNYDER of Pennsylvania. I yield.

Mr. WILCOX. The point I made was that the term "combat plane" has a definite meaning in Army circles, though it does not have to you and me. If the gentleman will refer to page 538 of the hearings, in the testimony of General Westover, he will find a heading reading, "Number of project airplanes for which funds are available", and the planes are listed underneath there as bombardment, observation, observation amphibian, and basic combat. General Westover refers to combat planes, and distinguishes them from bombardment or observation or any other type of planes.

Mr. SNYDER of Pennsylvania. No; he does not mention the words "combat planes" there at all.

Mr. WILCOX. In what respect would the elimination of this clause cripple the bill? The Army would still have full authority to buy the entire amount of new airplanes and accessories, would it not?

Mr. POWERS and Mr. McFARLANE rose.

Mr. SNYDER of Pennsylvania. I yield to the gentleman from New Jersey.

Mr. POWERS. The provision was originally inserted several years ago when the gentleman from Mississippi [Mr. COLLINS] was chairman of the committee; and if I am not mistaken, the provision was put in there to prohibit the Army from buying any more cargo planes or planes of that

type. I believe the gentleman will find the proviso as now contained in the bill is very satisfactory to the Air Corps. I believe there are 13 four-motor bombers on order. They have asked for no more, and this is entirely satisfactory to them.

Mr. WILCOX. As a matter of fact, would the elimination of this clause in any way interfere with the procurement program of the Army?

Mr. SNYDER, of Pennsylvania. It might be construed as an expression of willingness for the Army to ignore the procurement program upon which the appropriation recommended is based.

Mr. McFARLANE and Mr. MAGNUSON rose.

Mr. SNYDER of Pennsylvania. Mr. Chairman, I yield to the gentleman from Texas.

Mr. McFARLANE. Is it not true that the phrase which was placed in the bill several years ago was to stop the further purchase of these "sacred cows", or, as we called them in the Naval Affairs Committee, the "admiral's taxis"?

Mr. SNYDER of Pennsylvania. Yes; planes of any type other than combat.

Mr. McFARLANE. I think it is a wise provision and ought to stay in the bill.

Mr. SNYDER of Pennsylvania. I now yield to the gentleman from Washington.

Mr. MAGNUSON. Is the restriction stated by the gentleman on yesterday limited to the purchase not of what the gentleman from Texas mentions, but the regular war planes of the four-engine bomber type?

Mr. SNYDER of Pennsylvania. There is no limitation in this bill. The gentleman cannot cite any limitation upon the procurement of four-engine bombers.

Mr. MAGNUSON. No; but I was wondering if the gentleman's remarks yesterday in which he stated he deemed it not advisable to purchase more four-engine bombers were directed at a certain airplane factory in my district, which is the only airplane factory that manufactures such planes—Boeing, in Seattle.

Mr. McFARLANE. Oh no; the gentleman is badly mistaken about that.

Mr. MAGNUSON. I am just clearing the record. Then the gentleman answers my question by saying no.

[Here the gavel fell.]

The CHAIRMAN. The question is on the amendment of the gentleman from Florida.

The amendment was rejected.

Mr. McFARLANE. Mr. Chairman, I move to strike out the last word.

Mr. Chairman, I think the Committee is very much in order in including this provision in the bill and in defeating the amendment we just now voted on.

That amendment, or a similar one, has been in several previous bills and is working satisfactorily. The provision in the bill which the amendment of the gentleman from Florida [Mr. Wilcox] would have eliminated was inserted several years ago by the gentleman from Mississippi [Mr. Collins]. This provision stopped the further useless and wasteful expenditure of funds for the purchase of "generals' taxis" in the Army and "admirals' taxis" in the Navy.

#### AIRPLANE SINKS WARSHIP

My particular point in rising to speak at this time is to call the attention of the House to the headline in this afternoon's paper, which shows that a rebel warship was sunk by an airplane bomber off the coast of Spain, and to again point out the weakness of our aircraft procurement system and the effect this monopolistic system is having on our country. In doing so I want to pay proper respect to a little-appreciated prophet, the late Gen. William Mitchell, who repeatedly called the attention of the different committees of the Congress to the effectiveness of airplanes in warfare, and particularly demonstrated to our country how easily and effectively airplanes can sink any kind of warships. The Navy Department, to the best of its ability, has challenged from time to time the effectiveness of war planes in the sinking of battleships. This paper—today's Washington Evening Star—shows a picture of the battleship that

was sunk off the coast of Spain by bombing planes. It was one of the larger battleships of one of the Spanish navies, a vessel carrying some 10- or 12-inch guns, as well as anti-aircraft guns and other equipment.

#### MONEY SPENT FOR OBSOLETE EQUIPMENT

I also wish to call the attention of the Members to the enormous amount of money we are spending for aircraft, as shown by the hearings at pages 540 and 541. Here it will be noted that for aircraft purchases and the necessary equipment and accessories that go with aircraft for the past 5 years we have expended for the Army some \$344,000,000 and for the Navy some \$320,000,000.

This bill, if I read it correctly, carries about \$120,000,000 for new equipment. The Navy bill carried a similar amount, or at little bit less, and if you will read the Aircraft Act of 1926 and then study the method of procurement of both the Army and Navy Departments you will find they are not following the strict letter of the law in aircraft procurement and that little or no competition is being had in such procurement.

During the last Congress this House appointed a committee to investigate cross-licensing and patent pooling and under the very able direction of the gentleman from New York, the Honorable W. I. SROVICH, chairman of the Patents Committee of the House, this committee for several weeks went carefully into this matter. I was appointed general counsel for this committee and had the opportunity of receiving firsthand information as to how the giant monopolies of this country have been able to build up and perpetuate same largely through their monopolistic patent rights granted under the patent laws of this country. Then, through their cross-licensing agreements, we found how they have been able to control most of the major industries of this country. I hope the membership of this House will find time to read the three-volume report of this committee's investigations and recommendations in order that we can bring forth and enact legislation that will stop this giant Government-given monopoly that has done so much to perpetuate the strong at the expense of the weak.

Recently the Honorable Robert H. Jackson, Assistant Attorney General of the United States, in a speech made this significant statement:

While the Nation has forbidden monopoly by one set of laws, it has been creating them by another. Patent laws, valuable as they may be in some respects, often father monopoly. Unless we are prepared to reconsider the conditions upon which we will extend patent protection, we can have no consistent antimonopoly policy.

While the country has forbidden monopoly, it has also been subsidizing it. Monopoly has had tax advantages that have aided its rise. While the sale of a small business to another who wished to continue it as such would be subject to a capital-gains tax, if it were absorbed by a big business, the matter could be arranged in the form of a tax-free reorganization. The tax-free reorganization privilege has been a powerful incentive for the concentrating of business. The advantage in single transactions, at the cost of the Treasury, has often exceeded the whole annual appropriation for antitrust enforcement. Enforcement has been and is inadequately financed.

Moreover, the privilege of paying dividend profits free of tax from one corporation to another operated as a subsidy for the holding companies one of the most favored forms of creating and operating monopoly. The recent repeal of this privilege and the substitution of an intercorporate dividend tax has already proved highly effective in dissolving holding companies, and undoubtedly an increase in that tax would prove an automatic discouragement of that particular type of antitrust violations.

Only when the patent laws, the tax laws, the Securities Act, and all other laws of the United States are brought to exert their pressures toward the encouragement of small business, rather than toward its destruction, can we say that we have a national policy against monopoly.

Certainly the great masses of our people can find no fault with the above statement and the conclusions reached.

For example, there appeared before our investigating committee Mr. Burnelli, of Texas, a great aeronautical engineer and inventor, who told us of his experiences in trying to finance and manufacture his basic airplane patent he had received from our Patent Office, which, according to many aeronautical experts, seems to have many far-reaching advantages over any existing aircraft; and yet, because of the airtight cross-licensing and pooling agreements of the Air Trust, he was unable to make headway against this group

and was forced to go to England and other countries and license and manufacture his airplane before he could receive the proper consideration in this country.

The leading aeronautical engineers of the world, familiar with the Burnelli patents, express their hearty approval, among them being Dr. Alexander Klemin, in charge of the Daniel Guggenheim Institute of Aeronautics at New York University, who states:

The comparison of commercial transport airplanes of today with the Burnelli transport plane shows marked superiority in cabin capacity, space per passenger, cruising and top speeds, safety, and efficiency.

The present demand for performance should be fully satisfied by the high indicated performance of the Burnelli twin-engine plane with either air or liquid cooled power plants.

The engines are housed side by side in the leading edge of the airfoil body in the most efficient position as demonstrated by the N. A. C. A. in their extensive program. The housing of the engines in this position, coupled with aerodynamic efficiency of the lifting fuselage, makes the Burnelli design aerodynamically superior to conventional twin-engined or even single-engine designs.

The arrangement of the power plant and the attachment of wings and landing gear have led to simplification of design, which not only helps reduce weight but reduces construction costs and, what is more important perhaps to the air-transport operator, reduces maintenance costs.

Of equal importance is the fact that the cabin space per passenger is much larger than that of any conventional airplane today, and this is obtained while maintaining aerodynamic superiority.

Not only is cabin space important for transport passengers, but for carrying bulky packages, which comprise a great part of air-express service today. Very often the full pay load, in pounds, cannot be realized due to the space requirements of goods to be transported.

The advantage of the Burnelli principle of design should prove of even greater value in the "giant" long-range airplane of the future.

And as stated by Mr. Clyde E. Pangborn, world-renowned aviator:

(1) The engines are ahead of all structure. This is very important to safety in the event of accident, as the engines and their strong mounts would absorb a large degree of the impact, thereby protecting the cabin and passengers. The pilots' section, being located rearward and not in line with the engines, offers maximum safety for the crew.

(2) The propellers operate ahead of all structure and are not attached to the lighter outboard wings. This is an important safety factor in the event of propeller failure, as no parts would strike into the structure or cabin sections or affect any sustaining surface through the tearing loose of the engine mount.

(3) The propellers operate close together with no body in between, as is conventional. The advantage of this quality, though obvious for flying with one engine stopped, is immediately noticeable in the more efficient flying and control qualities of the plane, as the corrective use of controls to overcome the offset propeller thrust augmented by the stopped propeller drag is practically nil, and right or left turns easily made. This is a "premium" factor in view of the United States Department of Commerce requirements whereby a twin-motored plane must be licensed according to "ceiling" and "pay load" capacity when operated with but one of its motors and under satisfactory control characteristics, as practical flight on one motor with safety is the main purpose demanding the use of multi-engined designs.

(4) The broad airfoil form of lifting fuselage of the Burnelli design is surrounded by all of the major load-carrying structure; the engine mounts are forward with a strong metal bulkhead between; the wing beams are across the ceiling; the landing-gear structure at the sides unlike the long tubular fuselage construction of the conventional transport type, which forms mainly a streamline housing for the cabin section, with the main load-carrying elements not contributing to the strength thereof. Further, the compact airfoil body section of the Burnelli design possesses far greater resistance to buckling on impact than a long tubular body with engines rearward, in which the bending loads are maximum at the passenger section and which is weakened to a certain extent by the windows and doors. Further, the landing gear and tail wheel of the Burnelli design contribute no direct shock to the lighter outboard wings or tail group, the landing strains and taring shock loads being directly applied to the deep-sectioned body, thus imposing no landing strain through the more delicate wings and tail elements as in contrast to conventional designs.

(5) The fact that the body actually lifts 25 percent of the gross weight, as per the approval of the National Advisory Committee of Aeronautics for air transport carrier license purpose, makes it clear that the wings are proportionately reduced in required area and relieved of load with substantial relief of bending stresses throughout, as the lift forces peak, in the center of the airplane, instead of being reduced in this critical load section by the addition of a nonlifting body element. With the body supporting 25 percent, or 3,400 pounds, which is equal to the body structure plus the engine weight, it is understandable that the plane should ride through rough air or maneuver with less shock

and landing strain throughout, and also that the compactness of weight provides better stability and control qualities in its operation.

(6) Ease of inspection and maintenance is an important factor of safety, and the human element will always be a problem in this respect. The Burnelli ship is in a class by itself in this feature, because not only are all engine details, fuel and instruments, leads and controls more compact and easily accessible in the nose of the wide body, but the distinct feature of these elements being visible to the pilot and accessible in flight also must be appreciated as a most desirable maintenance and safety feature. The retractable landing gear is not only visible to the pilot in flight but accessible for inspection of adjustments, another exclusive advantage.

(7) An interesting inherent safety quality of the design for over-water operation is the fact that the wide body, made watertight, will serve as a boat bottom for distress landing and float indefinitely, as the body will provide adequate buoyance, with required stability, serving as a life raft. The wings can be easily arranged for quick release to entirely achieve this purpose. It is generally recognized that the landplane is of higher performance and economy than the more cumbersome flying boat, which depends on side floats for marine stability.

The arrangements for the pilot and visibility provided is entirely satisfactory and in certain respects superior to present transport practice. Also, and a very important feature, is the unobstructed passenger vision, due to the high wing arrangement.

With modesty I state that my judgment is established on over 14,000 hours of flying, covering all the types of aircraft and operations of same, including the latest types.

I have piloted the UB-14 through its test and demonstrations, covering about 100 hours' flying, and know it to represent a distinct advance in aircraft design, in consequence of which I have selected the Burnelli UB-14 transport for my projected nonstop refueling flight around the world.

Yet this Texas inventor is just one of the many such inventors Nation-wide whose great contributions and inventive genius have been smothered in every way possible by these monopolistic groups. We found that what applied to the cross licensing and patent pooling in the monopolistic aircraft field, also applied with equal force to the fields of radio, telephone, telegraph, television, oil-cracking processes, shoe manufacturing, medical instruments, and so forth.

#### LAW VIOLATED IN AIRCRAFT PROCUREMENT

I have repeatedly called to the attention of the Congress on several different occasions and I have placed in the RECORD copies of the contracts and references to aircraft procurement law violations, and have also put in the RECORD the Comptroller General's reports on the way these contracts have been construed, which shows that both the Army and the Navy have set up their own systems of procurement contrary to the Aircraft Act of 1926. The Comptroller's reports show that more than 90 percent of the equipment, up to the time my report was filed in 1934, had been bought in open violation of the Aircraft Act, and I want at this time to call your attention to the fact that we ought to compel its observance by all of the departments in their procurement of aircraft or amend that act.

[Here the gavel fell.]

Mr. McFARLANE. Mr. Chairman, I ask unanimous consent to proceed for 5 additional minutes.

The CHAIRMAN. Is there objection to the request of the gentleman from Texas?

There was no objection.

#### NO TAIL-GUN PROTECTION

Mr. McFARLANE. I also wish further to call your attention to the colloquy on page 538 of the hearings between the chairman of the subcommittee and General Westover, in which the chairman makes an observation in regard to these heavy bombers, in which the gentleman from Florida is interested:

Mr. SNYDER. Of course, they are fast and well supplied with armament and certainly, I should say, a monument to the skill of aeronautical and other scientists; but, at the same time, owing to their great size, despite their speed, they cannot be maneuvered as readily as the smaller types of fighting ships, and therefore would they not be vulnerable to attack by a squadron of five or six of the most modern pursuit planes?

General Westover. The objective of pursuit is always to be so much faster and so much more mobile and to have sufficient fire power to be able to attack the best bombers in existence. However, the defense of a bomber consists largely in the stability of its gun platforms and the number of guns placed so as to cover every angle of approach. A pursuit plane, unless it has the opportunity for a straightaway dive and effective short-range gunfire, cannot achieve its objective.

I call the attention of the Members of the House to the fact that, as I understand it, we are the only major power that does not have adequate tail-gun protection to the aircraft we are buying today. This has been pointed out to the committees repeatedly and nothing has been done about it, and yet we are spending this year more than \$100,000,000 under this bill and under the Navy bill, and we are buying what will be considered obsolete equipment at the time it is purchased, and nothing is being done about it.

It seems to me a committee should be appointed to look into this whole subject carefully to the end that the American aviator who goes into the air may fly the best equipment obtainable. I think a slight investigation will convince the Members of the Congress that the entire air industry is owned principally by the Chase National, the National City, and the Morgan group, who own practically everything else that is worth owning, and there is little or no competition in this field, just as is true in many other fields because of their monopolies largely brought about through their financial set-up and cross-licensing and patent-pooling agreements. I believe as Members of Congress we owe it to ourselves to go carefully into this matter to the end that the American taxpayer and the public, as nearly as possible, may get value received for the money expended.

This is why I wanted to bring these facts to your attention, as well as the further fact that if you will look at my report, filed on May 30, 1934, pages 10034-10064, CONGRESSIONAL RECORD, Seventy-third Congress, second session, you will find out that there was further pointed out our relative standing in aircraft among the world powers. This report is the first complete classification of all aircraft in the different categories throughout the world and it merits your careful study. I am talking about the ability of our aircraft war planes actually to maintain our position in the air among the world powers.

It was further pointed out at that time, in 1934, when the report was filed, and the report was checked by Dr. Zahn, who is the head of the Division of Aeronautics of the Congressional Library, the largest aeronautical library in the world, who found the report accurate, that on a merit basis, not on the number of airplanes, because the number of airplanes does not represent our relative standing among the world powers; but Dr. Zahn's report, which is filed in the RECORD, above referred to, shows that we stand about sixth, and we are further down in the category today, on the basis of merit, than we were at that time, and we are spending today more than twice as much money as any of the other major powers for the equipment we are purchasing and getting less for the money we are spending.

For example, during 1936 the Government purchased 90 large twin-engine bombers, 100 medium twin-engine bombers, and 13 four-engine bombers for the Army Air Corps, costing over \$15,000,000. During the same period of time the Navy purchased 110 twin-engine patrol flying boats for about \$11,500,000, and during this year contracts have been let for more than double this amount of new aircraft equipment, and none of this equipment nor any of the other aircraft we have in either branch of the service has any adequate tail-gun protection, and we are the only major power that has failed to provide adequate tail-gun protection for all of our aircraft.

#### DIESEL AIRCRAFT ENGINES

Let me call to the attention of the House that other nations have made great advances in the use of Diesel engines for aircraft, and they have found that the Diesel engine has many advantages over the gasoline engine for aircraft purposes.

In talking with Mr. Paul H. Wilkinson, an excellent aeronautical engineer of New York City, editor of the magazine Diesel Progress, he lists the following advantages for Diesel engines for aircraft over gasoline engines:

(1) Fire hazards in the air and on the ground are eliminated by the use of nonexplosive Diesel fuel. This saves valuable lives and equipment.

(2) Fuel consumption is reduced by approximately 20 percent, based on present-day operating conditions. This enables a greater pay load to be carried or a longer distance to be flown for the same weight of fuel.

(3) Fuel cost is reduced by at least 60 percent compared with 87-octane gasoline, and by at least 75 percent compared with 100-octane gasoline. This reduces operating costs.

(4) Magnetos, spark plugs, ignition cables, and shielding are not required, as air heated by compression in the engine cylinders is used to ignite the fuel. This eliminates electrical interference which is dangerous to navigation.

(5) Carburetors with complicated compensating devices are replaced by fuel pumps and injectors. This eliminates the possibility of ice formation at the air intake, and the formation of an explosive mixture outside of the engine cylinders.

(6) The frontal area is reduced by approximately 40 percent for an "inline" Diesel engine compared with a radial gasoline engine of equal power. This improves the aerodynamic qualities of the airplane.

(7) On a Diesel engine an exhaust-driven (turbo) supercharger can be more readily used to maintain the power of the engine to high altitudes, as the temperature of the exhaust gases is 40 percent less than that of the gasoline engine. This results in increased engine performance as less power is required to drive the supercharger.

(8) Smaller cooling surfaces can be used as the greater thermal efficiency of the Diesel engine results in lower heat losses. This saves weight and improves the aerodynamic qualities of the airplane.

(9) Although the actual weight of the Diesel engine itself is slightly more than that of a gasoline engine of equal power, for flights of 3 hours or more the weight of the engine plus the fuel is less than that of a gasoline-engine installation. This means that the Diesel engine is lighter than the gasoline engine when the weight of fuel carried is taken into consideration.

(10) The Diesel can operate on the two-cycle principle, which the gasoline engine cannot do, and thus it can develop at least 35 percent more power for the same displacement. This results in a saving of weight and makes it a much smoother running engine of greater reliability.

A large gasoline engine suitable for aircraft use cannot operate on the two-cycle principle due to difficulties in introducing and compressing the explosive mixture. It has to operate on the four-cycle principle, in which the piston is driven by the crankshaft half of the time, as there is only one power stroke for every two revolutions of the crankshaft. This actually absorbs power from the engine and definitely limits its power output.

In a two-cycle engine there is a power stroke for every revolution of the crankshaft, which results in a smooth, well-balanced flow of power. Operating on this principle, the Diesel engine has a tremendous advantage, as it can develop considerably more power, and the wear and tear on the engine are lessened due to the even stresses imposed on the moving parts.

#### LITTLE OR NO AIRCRAFT PROCUREMENT COMPETITION

Germany and other European nations are making rapid progress with Diesel aircraft engines, and will, I understand, have 1,500-horsepower Diesel aircraft motors in production next year, while we in this country seem to have made little or no progress with Diesel aircraft engines and still toy with very low power Diesel motors in the experimental stages in both branches of the Service, and we still seem to be content with sending circular letters to the company making the aircraft equipment, whatever the Procurement Division happens to fancy at the time and have these companies present their finished airplane on the line for competition at a certain date, which so-called manner of competition now carried on by the Army and Navy prohibits the little fellow or so-called independent companies, or any but the most powerful, from competing.

General Mitchell, in my opinion, was right when he bitterly condemned the Air Trust for the high-handed way for which they have taken over the complete aircraft industry and have used it for their own private gain at the expense of our national defense in the air. As he and others have repeatedly pointed out, the Air Trust have allowed the aircraft industry to develop only as they have desired and have had our country withdraw from the Snider cup races and European competition for reasons best known to themselves. The fact that Europeans hold almost all aircraft records worth having speaks for itself, yet no one is allowed to interfere with their racket, and we go merrily on while they sell obsolete equipment to eight different divisions of the Government at monopolistic prices—all the traffic will bear.

I am still of the opinion that the recommendations made in my minority report of 1934 are sound and should be promptly carried out. Those recommendations are as follows:

(1) I recommend that section 10 (Q) of the Aircraft Act be repealed and that section 10 (K) and section 10 (T) be amended so as to require open competitive bidding in the production procurement of all aircraft equipment, as was required by the Government prior to the passage of the Aircraft Act in 1926.

(2) That the proposed amendment of subsection 10 (K), as amended, would continue, so as to permit the continuance of purchase by the Secretary of the Navy without competition such designs, aircraft, aircraft parts, and aeronautical accessories as may be necessary for experimental purposes only, but should not permit quantity purchases or repeat purchases of any such proven experimental designs, etc., without open competitive bidding.

(3) That all future contracts of the Navy contain a provision giving the Government the right or license upon the payment of a stipulated royalty or sum, the right to manufacture or cause to be manufactured such designs, aircraft, etc. This would enable the Government to eliminate patent contentions and permit free and open competition in all future procurement of all aircraft. This procedure was followed by the United States from 1917 to 1928 in certain cases.

(4) That the naval aircraft plant at Philadelphia be continued to operate as under present schedule without any enlarged powers, duties, or authority, except that the excessive overhead expenses, wherever possible, be eliminated. That disinterested witnesses be called to testify, if any doubt exists in the minds of the committee as to the exact status of the aviation industry regarding the interlocking connections of the different companies and the complete domination of the industry by the four major holding companies comprising the Air Trust.

(5) That a thorough investigation be made as to the desirability of future use of alloys of aluminum in the manufacture of our aircraft, and particularly the adaptability and usefulness of stainless steel for aircraft manufacture. That a comparative study of the use of these materials as to cost, maintenance, weight, length of life, ability to withstand salt water, etc., be carefully analyzed.

(6) That no more purchases of lighter-than-air craft equipment be made unless and until their elasticity of performance, maneuverability, and general usefulness under actual war conditions is definitely proven to the entire satisfaction of a disinterested board.

(7) That all aviation units attached to battleships, cruisers, or aircraft carriers be maintained at the highest state of efficiency for war purposes and all "admirals' taxis" (or joy-riding planes) be eliminated from the fleet service.

(8) That the Aircraft Act be amended so as to prohibit any governmental department from awarding any contract for any kind of aircraft to any company having connections with subsidiaries, affiliates, associates, or holding companies, directly or indirectly, by stock ownership, interlocking directorates, interlocking officers, or otherwise, if said subsidiaries, affiliates, associates, or holding companies are engaged directly or indirectly in the operation of competitive manufacturing, jobbing, or selling concerns dealing in any kind of aircraft equipment.

(9) That the Aircraft Act be so amended so that it will stimulate inventive genius.

(10) That the air-mail laws be amended so that the Government will take over and operate the air mail and own 51 percent of the stock of the newly organized companies to be chartered for this purpose. This should be done for the same reasons that we carry other mail and to furnish proper training for the men in the Army to fly domestic mail, the men of the Navy to fly coastal and foreign mail, and primarily to save the taxpayers money and for the general good of the services. Great Britain, France, and other countries recognized the necessity of owning and controlling their air-mail lines soon after the World War and have found this policy sound.

(11) That the eight different branches of aeronautics of the Government be combined under a Secretary of the Air of equal standing of other Cabinet positions, which department shall have a separate budget, personnel, and status as other departments of the Government. That this be done in the interest of eliminating waste, extravagance, duplication, overlapping of responsibilities, and for the benefits to be derived from a united supervision. Germany unified her air force in 1916. After serious damage to Great Britain from the air, she unified her air forces in 1917. France, Italy, and other European nations soon followed suit. There are no divisions in the air such as we recognize on land and sea and we must have a centralized command for war purposes.

(12) That the law creating the National Advisory Committee for Aeronautics be amended, requiring that eligibility for membership on this committee be limited to those not connected directly or indirectly with any aviation company selling any aircraft equipment to the Government, that an affidavit be filed by each member upon appointment showing completely their property holdings and connections and that such an affidavit be filed the first of each year thereafter and all such information be made a part of the annual report of this Board, violation of such law to automatically suspend member from the Board.

Mr. SNYDER of Pennsylvania. Mr. Chairman, I move that all debate upon this paragraph and all amendments thereto close in 15 minutes.

The motion was agreed to.

Mr. SABATH and Mr. KENNEY rose.

The CHAIRMAN. The Chair recognizes the gentleman from Illinois [Mr. SABATH] for 5 minutes.

Mr. SABATH. Mr. Chairman, the gentleman from Texas [Mr. McFARLANE] brought home clearly and forcibly the things that I desired to call to the attention of the House. I think the House is indeed fortunate in having a capable and strong chairman on the Committee on Military Affairs. I do hope, however, that he will take notice of certain conditions which exist in the Army Air Corps.

During the war, when 6 precious months were allowed to elapse before production of aircraft was begun, I became bitterly aware of a monopolistic combination which placed private interests above the need of its country.

When the war had ended and the years passed by, I paid but scant attention to that combination, as I felt that the free competition of peaceful times would see a healthy and unrestrained normal growth of aviation.

It was therefore with surprise and a good deal of apprehension that I viewed the revelations of the Post Office and Post Roads Committee, and the later findings of a Senate committee, disclosing that the Government was being mulcted of \$12,000,000 a year in air-mail contracts.

The Postmaster General, complying with the general demand, in which I joined, canceled all air-mail contracts, and the Army took over the delivery of air mail.

Misfortune and death rode the airways with the Army pilots, and the country discovered with dismay that its aircraft was defective.

Many Army officers were killed, which is indeed to be regretted, but there can be no comparison with the scores dead in airplane accidents in the past 6 months.

It is evident that something is wrong somewhere, and I have been wondering just what the Air Corps has been doing to prevent the great number of deaths, to say nothing of the hundreds of thousands of dollars lost in the wreckage of aircraft.

True enough, the Army Air Corps cannot be held responsible for accidents in air transport operations, but we have spent and are still spending millions of dollars to aid basic design and commercial aviation generally on radio range beams, beacon lights, improved airports and intermediate landing fields, on weather reports, and in many other directions. We have been for years and are now granting subsidies. The Government is spending millions to promote aviation, and it is up to the Government and up to Congress to see that every possible means is taken to safeguard its Army pilots and commercial passengers.

During my recent illness I was obliged to refrain from active duty, and I took the opportunity of some leisure time to look into this question and to trace it back to the time of the war. I found suspicious reason to wonder whether the same combination which existed then does not today function even more efficiently. And I am led to wonder, ladies and gentlemen, whether the Wall Street broker combination has not been able to prevent the adoption of new inventions and improvements necessary to safe flying for reasons of their own. Frankly, I cannot understand why the Air Corps has ignored many inventions which I am told have been offered to the Government.

In other years I remember the opposition of the railroads when we endeavored to urge that they utilize certain safety devices and improvements. I recall how it was necessary to compel them to adopt the block-signal system, air brakes, steel cars, and other improvements. Those devices have greatly reduced the hazards of railroad travel, but they had to be forced upon the railroads. Today I strongly believe that the same condition exists in aviation. While I have no statistics before me, I venture to say that more lives have been lost in commercial and military flying than were lost in those earlier years in railroad accidents. Public opinion will not long tolerate a condition like this.

Only a few weeks ago I listened to a radio speech by a gentleman whose name I do not recall at the moment, but who is recognized as one of the greatest authorities on aeronautics. He deplored the failure of the Government to avail itself of advanced designs, improved construction, and new inventions. I join with him in that charge.

I recall instances in the past where I personally urged certain trials and tests which were denied, and later the machines I showed an interest in, but which the Department would not even test, were adopted by private industry, and even by foreign governments, to the detriment and disadvantage of our own Government.

A few years ago I had the opportunity of discussing the subject with the former chairman of the Military Affairs Committee. He was aware of the activities of this monopolistic

combination, and did his utmost to destroy their control of aviation in the United States. I hope that the present chairman of that committee will be able to do something along that line, and that he will compel the Army Air Corps to utilize known safety devices, improvements, and inventions, and prevent the necessity of inventors taking their inventions to foreign governments.

A good deal of evidence was brought to light a short 2 years ago, and I hope that Congress, the Secretary of War, and the President will take cognizance of it. I for one do not intend to stand by and see the Air Corps reject all inventions and improvements which do not originate from the Wall Street controlled monopoly.

Mr. HILL of Alabama. Mr. Chairman, will the gentleman yield?

Mr. SABATH. Yes.

Mr. HILL of Alabama. The gentleman has drawn a very serious indictment against our Air Corps in its purchase of planes and plane equipment. In justice to the Air Corps, and, for that matter, injustice to anyone else against whom he has drawn such an indictment, he ought to be more specific.

Mr. SABATH rose.

Mr. HILL of Alabama. Oh, the gentleman must let me finish, because he has drawn a serious indictment. A subcommittee of the Committee on Military Affairs, of which I happen to be a member, investigated for some 3 years, by authority and acting as the agent of this House, the matter of airplane and airplane equipment purchases. We found a few things that we did not think were right, but on the whole we found that under Mr. Woodring, who at the time was Assistant Secretary of War, we had been buying our planes economically and in a wise and satisfactory way. Every man who makes an invention has an idea that that is the greatest invention that God ever put into the mind of man. There are people in this country, honest and sincere, who think they have a great invention and who will come to the gentleman from Illinois [Mr. SABATH] just as they do to the gentleman from Alabama, and say that if the Army would just buy that invention there will be no more accidents. I suggest to the gentleman that he investigate this matter further.

The CHAIRMAN. The time of the gentleman from Illinois has expired.

Mr. SABATH. Mr. Chairman, I ask unanimous consent to extend my remarks in the Record.

The CHAIRMAN. Is there objection?

There was no objection.

Mr. SABATH. Mr. Chairman, under leave to extend I insert herewith a statement taken from the World Almanac of 1937 of comparative expenditures of the United States Military and Naval Establishments:

Fiscal year	War Department	Navy Department
1907		
1908	\$122,576,465	\$97,128,469
1909	137,746,524	118,037,097
1910	161,067,462	115,546,011
1911	155,911,706	129,173,717
1912	160,129,858	113,957,644
1913	148,801,425	135,591,956
1914	160,137,353	133,262,862
1915	173,270,486	139,652,186
1916	172,715,421	141,635,854
1917	164,546,867	153,553,567
1918	358,158,361	239,632,757
1919	4,850,687,187	1,278,840,487
1920	8,995,850,266	2,002,310,785
1921	1,610,687,381	736,021,458
1922	1,101,615,013	650,373,836
1923	454,730,718	476,775,194
1924	392,733,635	333,201,362
1925	348,629,779	332,249,137
1926	361,887,889	346,142,001
1927	355,072,226	312,743,410
1928	360,808,777	318,909,035
1929	390,510,503	331,335,492
1930	416,801,546	364,561,544
1931	453,524,973	374,185,639
1932	478,418,974	354,671,004
1933	468,226,515	357,820,860
1934	438,093,747	349,561,924
1935	287,697,260	274,388,386
1936	269,433,582	321,110,530
1936	445,900,068	391,424,149

Mrs. ROGERS of Massachusetts. Mr. Chairman, I rise to call the attention of the House to the balloons or radiometerographs that are being sent out now with a view to testing weather conditions at a great altitude. Harvard College is making very successful tests with these balloons, as well as the Massachusetts Institute of Technology, which has been getting some very fine results from them also. They can go much higher than the Army airplanes are allowed to go. I understand that they can make a report as to what is likely to be the weather for perhaps several days ahead.

The use of radiometerographs in making weather observations is important to all. I find that meteorological data is needed by observers. I find observers need—

(a) They need records of pressure, temperature, relative humidity.

(b) The Weather Bureau now obtains this information daily from their stations scattered throughout the country. The records are transmitted to Washington and from them the weather maps are made.

(c) Scientists agreed some years ago that the same data obtained from the upper air would be more valuable in making more accurate predictions.

(d) To obtain this better information, airplanes have been sent up from over 20 fields in the United States whenever it was possible to fly. At some fields these flights have been made by the Army, from others by private contractors. But there are definite limitations to their use:

First. They cannot fly in bad weather, when the data is most needed.

Second. They are allowed to ascend only 17,000 feet, while data from higher altitudes are considered more valuable.

Third. Much time is used in reaching that height, descending, and then computing the data.

Fourth. There is always the danger of accident, which may be fatal or at least costly.

Fifth. Private contracts for such work are about \$25 per flight.

(e) To supply a better, more dependable method of obtaining the desired information, several institutions and private individuals have been working diligently and at considerable expense to themselves to develop an instrument which can be sent up with a free balloon and which will replace the airplane. The development work is complete; it remains to put the radiometerograph to practical use.

II. THE INSTRUMENT

(a) It is called a radiometerograph.

(b) It is a combination of barometer, for pressure; thermometer, for temperature; hydrometer, for relative humidity.

(c) The three are linked to a driving mechanism—at present, a clock—and the whole connected to a radio circuit, so that at regular intervals radio signals can be sent out which can be picked up by a receiving set and interpolated to give actual values of pressure, temperature, and relative humidity.

(d) The instrument is sent aloft attached to a free balloon having a known ascension rate.

(e) As the signals come in periodically, the observer at the receiving set can immediately obtain the data desired and know at once the condition of the upper air through which the balloon is traveling.

(f) The instrument, consisting of the elements described, the necessary batteries, radio tubes, and so forth, weighs about 1 pound.

III. ADVANTAGES OF INSTRUMENT FLIGHTS

(a) Balloons, with their instruments, can be launched in any weather.

(b) Regular flights can be made to 50,000 feet altitude, often higher.

(c) Data is available at once.

(d) There is no danger to anybody.

(e) The cost of the balloon is under \$3; it is expected that the instruments, when produced in quantities, will not cost more than \$15; and hydrogen, the lifting gas, is about 1 cent per cubic foot. Thus, the total cost will be less than the contract cost of airplane flights.