



## PAYDAY CHANGING; NEXT CHECK MAR. 21

The next paycheck for Laboratory employees will be delivered on March 21 in line with the new system for simplifying the payroll of federal workers. Starting with this check, the dates of future checks will also be advanced until paydays fall on the 10th and 25th of the month instead of the 5th and 20th as heretofore.

The change has been put into effect so the payrolls can be made up after the pay period has been completed instead of being prepared in advance as heretofore. This resulted in the cancellation of numerous checks, preparing supplemental payrolls and many adjustments in accounts, and it is believed that the new system will eliminate all, or at least a large percentage of, these difficulties.

## RED CROSS CAMPAIGN GETS GOOD RESPONSE

The Red Cross Drive got under way Tuesday and most divisions throughout the Laboratory report a very favorable response. One person in each division has been appointed to make collections, and these solicitors report that many sections are competing with each other to tally the highest average contributions.

Starr Truscott, chairman of the drive, stated 'I am very pleased to hear of the favorable response to the Red Cross drive. While it is, of course, too early to estimate results, I feel certain that all employees sincerely desire to do their very best and I believe we will top last year's drive by a good margin.'

'I was interested to note that the most generous individual contributors are the ex-service men who have come to here, particularly those who have served overseas. Better than anyone else they know how much the Red Cross means to the men who are doing the fighting! Any of these men who are back from the front lines know that the blood-

## HIGH ARMY OFFICIALS TO VISIT LABORATORY AND ADDRESS STAFF



Major-General K. B. Wolfe



Brigadier-General F. O. Carroll

plasma and surgical dressings supplied by the Red Cross frequently mean the difference between life and death to a wounded soldier. And the millions of of Prisoner of War packages sent by the Red Cross to our men in enemy hands are the only guarantee we have that they will return to us in good health when the war is over.'

Major-General K. B. Wolfe, Brigadier-General F. O. Carroll and other high ranking officers of the Air Technical Command will be the guests of the NACA next Tuesday for a tour of inspection of the Laboratory's facilities and an opportunity to meet and address the staff.

Other members of the official party will include Colonels F. Z. Bogert, P. H. Robey, D. L. Keirn, and H. R. Yeager, and Major J. P. AuWerter. Contingent upon their E.T.A. (Army for the time they're expected to arrive) a schedule has been made for them to visit from five to eight research activities.

Highlight of the day's goings-on is a planned speech by one or more of the party to the assembled Laboratory staff in the new Aircraft Loads Laboratory in the West Area. Personnel will be advised of the details by official memorandum at a later date.

Maj.-Gen. Wolfe is Chief of Engineering and Procurement and Brig-Gen. Carroll is Chief of the Engineering Division of the Air Technical Services command headed by Lt. Gen. William S. Knudsen.

## GREEN COW

Tonight - Friday - is the night! The first Green Cow dance to be held under the auspices of the new committee will take place at Hampton Armory this evening from 8:45 to 11:45 and those who have not yet purchased their season tickets are advised to hustle and get them this afternoon in order to get in the full eight dances to which they are entitled.

John Houbolt, Green Cow chairman, has announced that as usual manufacturers representatives at the field will be admitted to the dance by showing their identification.

Editorial

WE THANK YOU

It's an old old adage that a pat on the back never hurt anybody, he who gives or he who receives. We have no reason to complain after last week's issue. Never before, in the memory of the staff, has any Air Scoop or LMAL Bulletin met with such a friendly reception (with the possible exception of the Women's Issue), or have we heard so many nice things said about one. Countless employees have called us, stopped us in the halls, and written us to say how much they enjoyed the special supplement and to ask for extra copies to send home.

We have appreciated these comments no end and we'd like to pass them on to those Laboratory employees, other than the Air Scoop staff, who made it possible to assimilate the data and put it in readable form. To the men who handled the material for the three departments, Gerald Kayten, Research; Walter Hixon, Technical Service; and Ed Howe, Administrative; and to Leslie Merrell, formerly Executive Assistant, for his work in planning the issue, we offer our commendation and a proportionate share of the plaudits.

WOODWORKING CLASSES OFFERED AT N.N.H.S

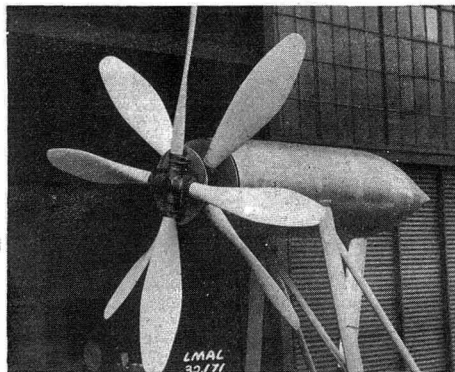
The Newport News High School is making the equipment of its woodworking shop available for a two months hobby course. Classes will be held two nights a week for two and one half hours each evening and a competent instructor will be on hand at all times. Equipment includes, in addition to the usual tools, two wood lathes, a rotary sander, shaper, jig-saw, circular rip saw, jointer and planer.

Classes will be limited to fifteen members. Registration will be taken in Room 102 of the high school between 6 and 8 p.m. on Monday, March 12 and a charge of \$3.00 will be made for 40 hours instruction. For further information call Joseph Schad, Newport News 2-4192 or Robert McKann, Tank 2 - 2394.

WORK OF PRD MADE COUNTER-ROTATING PROPELLER POSSIBLE

Just recently, the NACA has been responsible for an achievement whose far-reaching possibilities apply not only to air, but to water propulsion as well - the discovery of an adequate theory for counter-rotating propellers.

Though marine screw propellers had been used for many years they had been designed by a more or less trial-and-error method and their chief advantage over paddle wheels was merely their placement under water where they were much less vulnerable to damage. When aircraft propellers were first designed they, of course, followed the existing theory of marine propellers and ex-



Efficient counter-rotating propellers such as are now being used on the newest fighter planes were made possible by the work of the Physical Research Laboratory.

perience brought about changes from fabric-covered tubing which was used mostly on zeppelins, to wood, and finally to metal. Their designs were altered to airfoil shapes in the sections of the blades and whole libraries of books were written on how to design propellers to develop maximum thrust per horsepower. By combining experience and theory, fairly satisfactory results were obtained, but theoretical conditions were still hazy.

However, in 1931, Dr. Theodore Theodorsen, Chief of the Physical Research Division of this Laboratory,

issued a paper that gave a method for obtaining the pressure distribution along the section of the airfoil. By combining Theodorsen's calculations with the theory of Goldstein, an English scientist who, in 1929 had given an exact theory for obtaining the distribution of the thrust load across the disk of a propeller, it was possible to compute the properties of a single propeller and the exact loads on the blades.

Hardly had this problem been solved however, when new ones arose. The power to be absorbed by a single propeller increased from one to two and three thousand and even four thousand horsepower. Problems of ground clearance and weight arose, and even more serious difficulties with torque reaction... the tendency of the propeller to rotate the airplane in the opposite direction to which the propeller is turning.

Years before, an arrangement of two propellers on a common axis had been used and it was proved that the combination could be much smaller in diameter than a single propeller to give the same thrust. But these propellers were extremely difficult to design. Attempts to divide the thrust equally between the two propellers didn't work and results in general were so erratic that the type practically disappeared.

In marine work, attempts were made to put fixed guide vanes or contra-propellers either in front or behind the rotating propeller in order to increase efficiency but again, in the absence of adequate theory, most of them had to be discarded because they simply would not do what was desired.

The development of a good counter-rotating propeller therefore became a most desirable, but apparently unattainable objective until the Physical Research Division of Langley Laboratory went to work on the problem - and solved it. Due to their research a simple and accurate method for calculating the disk loading of any counter-rotating propeller has been developed, and already the double-prop is making its appearance on new planes where extremely high power is needed. Very rapid expansion of its use is expected and the counter-rotating propeller and the contra propeller will probably soon make a re-appearance in marine propulsion also.

FOR SALE: 12-foot sailing dinghy. David Ullman, Chemical and Metallurgical Lab.

FOR SALE: 18-foot catboat, 180 sq. ft. of sail. Chuck Dobrowski, Structures.

The LMAL Air Scoop, an official publication of Langley Memorial Aeronautical Laboratory, National Advisory Committee for Aeronautics, Langley Field, Virginia, is published weekly in the interest of its Laboratory employees. Address contributions to the Editor, Service Building, Telephone 2376.

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## AWT, FLIGHT BLUES, 8-FOOT TRIUMPH

AWT and Tank put on one of the best shows of the current basketball season when the Hydro boys lost an overtime thriller to the Characters 42-41. Jake Jaquis led a desperate Tank attack in the last quarter that picked up a five point deficit to tie things up at the end of the game, 34-34. With five seconds left in the game, Jake took the ball off his own backboard and went almost the length of the court to pot one in from the sidelines as time ran out. The extra period was the fastest three minutes seen this year as a total of 15 points were scored. Eddie Polhamus, who led the evening's scorers with 23 points, and Dan Bridges each sank two from the floor for AWT. Tank made a desperate final bid which tallied three points in 20 seconds but their luck ran out with the whistle. Jaquis and Jack Fitch led the loser's attack with 14 and 12 points each.

AWT ran in an early lead as Polhamus racked up 16 points in the first half but the third quarter showed signs of deterioration. The smooth heady play of guard Bill Bates was the steadying influence that seemed to keep the team from falling apart in the final half.

### Blues Win Another

The Flight Blues found a scrappy Loads team that pushed them hard for three quarters last week. ALD tied up the ball game early in the second half and stayed within a few points for about five minutes, but the smooth working Blue team forged ahead to win 27-19.

### Beiduk Leads 8-Foot

Felix Beiduk put on a one man show to lead 8' HST to a 37-18 triumph at the expense of PRT. Beiduk shifted from guard to forward in the middle of the game and accounted for 22 points. Tony Proterra was high for the losers with ten points.

## AWT GIRLS STILL LEADING LEAGUE

The AWT girls basketball team still retains its first place position in the league as the season passes the half-way mark. They remain the only team with a perfect record, the runners-up being PRT-16 Foot with three wins and one defeat.

In last week's games, PRT-16 Foot defeated Hampton 35-30 and the PRD-8-Foot ended in a 13-13 tie score. The standings are:

	W	L	Pctg.
AWT	4	0	1.000
PRT-16'	3	1	.750
Admin.Dept.	2	1	.667
ALD	3	2	.600
Hampton	2	2	.500
PRD	0	3	.000
8-Foot	0	5	.000

## THE LIFE at the LABORATORY

After months of slaving....

the girls at 61 Shenandoah Road, namely Nancy King, Dot Landon, Isabelle Montgomery, and Helen Marshall, with the able assistance of several of the Laboratory's most eligibles, finally added the finishing touch to the old homestead. The major feat was climaxed with open house last Saturday night.

Clint Brown, Supersonic Tunnel, and....

Jean Poythress Brown, formerly of East Engineering, are the proud parents of a six pound son, Dale Bradford, born Wednesday, February 28.

Fay Hill, formerly of Payroll.....

took the final step last Saturday when she became Mrs. Bill Williams in Texas.

After fourteen years with LMA.....

Zena Richard, Purchase Office, decided to change her career to that of house wife. She is now in Florida with her husband who has just returned to the States after three years overseas.

Seldom does a day go by that.....

we aren't called upon to answer the screw questions of some employee. Last week somebody wanted to know the relative weather of Cleveland and Langley. Last month two fellows were furiously arguing over whether Babe Ruth batted right handed or left. Bewildered looking gentlemen are always walking in with packages and asking 'Where does this go?' and at least 20 times a day we inform someone that Mrs. Hulcher's office moved down the hall - six months ago. However, the best to happen lately concerns a colored man who asked, through our eastern exposure window that overlooks the coal pile, where he could find 'erred.' Claire Burki, our newest employee who is always anxious to help, didn't know who, what, where, or why 'erred' was but she suggested that it might be a Mr. Erred and that she would check the Personnel Files. Finding no Mr. Erred she then asked her inquisitor if he was sure he had the right name. 'Sure,' he said, 'here it is right here, 'erred,' I.R.D.!

## STANDINGS

Team	Won	Lost	Pctg.
Flight Blues	12	0	1.000
Low Turbulence	10	2	.833
East Shops	8	3	.727
AWT	8	3	.727
Structures	9	5	.643
8' HST	7	4	.636
19' P.Tunnel	7	5	.583
Loads	6	6	.500
Free-Flight	6	7	.462
PRT	4	6	.455
IRD	5	6	.455
16-Foot	2	9	.182
Tank	2	10	.167
West Shops	2	10	.167
Flight Whites	0	13	.000

## BOWLING STANDINGS

by Roger W. Peters

The Jerks of IRD and the No Names of the West Area Sheet Metal Shop are tied for first place in the second round of the Wednesday night mixed duckpin league.

Team standings:

	W	L
Jerks - IRD	13	5
No Names - West Area Sheet Metal Shop	13	5
Gutter Rats - Structures	12	6
19' Tunnel	11	7
Bowl Cats - Structures	7	11
Dim Wits - Report Writing	6	12
16' H.S.T.	5	13
Keen Teem - Full Scale	5	13

by Edward Lipinski

There is unusually close competition in the Instrument Tenpin Bowling League. The teams are very evenly matched and the Washers, with seven wins and five loses are only .083 ahead of the Bolts who have won five and lost five.

Team standings:

Team	W	L	Pct.
Washers	7	5	.583
Bolts	6	6	.500
Nuts	6	6	.500
Screws	5	7	.416



Player	Team	G	FG	F	TP	Avg.
Polhamus	AWT	11	72	4	148	13.4
Rice	LTT	12	60	24	144	12
Cancro	19'	12	54	12	120	12
Jaquis	Tank	12	44	5	93	7.8
Bates	AWT	11	36	19	91	8.3
Bennett	FFT	12	37	16	90	7.5

# Meet the COMMITTEE

Theodore Paul Wright is an excellent example of the fact that young men frequently do not stick to the careers they pick out at first. If they did, Dr. Wright would be an architect today, commercial aviation would have missed one of its most ingenious minds, and the National Advisory Committee for Aeronautics would be minus one of its most valued members.

Dr. Wright was born in Illinois in 1895 and apparently his boyish dreams were of building houses instead of airplanes because he received his B.S. in architecture from Lombard College. However, he promptly decided that he was more interested in flying and enrolled in the Naval Aviation Ground School course at M.I.T.

World War I was in progress when he graduated, so young Wright became inspector of aircraft for the Navy and after the armistice he joined the company he had been inspecting - the Curtiss Aeroplane and Motor Company. (This organization later became Curtiss-Wright after the merger with the Wright Aeronautical Corp. The name is that of the co-inventors of the airplane, not Theodore Paul Wright, nor Burdette Wright who is vice-president of the corporation at the present time.)

Dr. Wright rose rapidly. By 1921 he was executive engineer and his steady rise continued until he became vice-president in 1930. His work was by no means entirely administrative, however. In 1928 he served as observer in a Curtiss 'Robin' airplane in a flight from New York to Los Angeles, blazing the route later adopted by Transcontinental Air Transport. And in 1929 he brought fame to himself and his company by producing Curtiss' famous "Tanager" which captured the Guggenheim Fund award of \$100,000 in an international competition for a safe airplane.

Even judged by today's standards, the "Tanager" was a good airplane. It was a 3-place cabin biplane departing from the design of other aircraft of its time with a floating aileron, automatic wing slots and controllable wing flaps. The aileron was installed in the tips of the lower wings and operated by a torque shaft running through the wings. It also had a NACA cowling and was highly safe and controllable. Dr. Edward Warner, at present one of Dr. Wright's colleagues on the Committee, flew the "Tanager" shortly after it won the competition and pronounced it to be the easiest, safest, and best plane he had ever flown. The Wright Brothers medal of the Society of Automotive Engineers

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LOST: Pair of diagonals. Initials T.A.S. on inside of handle. Lost on Shuttle Bus. Thomas Stacey, Telephone Service.



THEODORE PAUL WRIGHT

was also awarded Dr. Wright for his paper on the "Tanager."

Better controlled, sturdier, and faster planes and how to produce them are Dr. Wright's main interests. He is a good pilot himself, having advanced through the grades to Lieutenant in the U. S. Navy Reserve Flying Corps, so he has a practical realization of the requirements of an airplane. Doubtless this had much to do with his success in developing prize winning Pulitzer and Schneider cup racers and in bringing military aircraft up to their present high record of performance.

Dr. Wright remained with Curtiss-Wright until shortly before the present war when he resigned in order to join the Advisory Committee for the Council of National Defense. He remained with the Council only six months, returning to Curtiss-Wright in 1940. In 1941 he was recalled to Washington at the request of William S. (now Lt. Gen.) Knudsen to act as assistant chief of the Aircraft Branch of the O.P.M., later the W.P.B. In March, 1943 he became Director of the Aircraft Resources Control Office and at present he is Civil Aeronautics Administrator.

He has been a frequent contributor of highly authoritative articles to magazines and trade journals. One article in particular, "Hitler Isn't Bluffing," attracted nationwide interest at a time when many people thought he was. Dr. Wright is past President and a fellow of the Institute of the Aeronautical Sciences, President and Chairman of the Board of Award of the Guggenheim Aeronautical Medal Fund, and he holds an honorary D. Sc. from his old Alma Mater, Lombard College.

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WANTED: Ride to Birmingham, Alabama or vicinity sometime in May or June. D. H. Newby, IRD.

## "YOU CAN'T TAKE IT WITH YOU" TRYOUTS

'You Can't Take It With You', but the Hampton Little Theater is giving Laboratory employees an opportunity to try out for nineteen roles, seven female and twelve male, at try outs Sunday afternoon, March 11, at 2 o'clock at the Syms-Eaton Recreational Center.

The hilarious three act comedy, written by Moss Hart and George S. Kaufman, was voted the most outstanding play in 1936 and the best motion picture production for 1938. Such parts as the Mad Russian, Russian Countess, xylophone player, ballet dancer, aged grandfather and numerous others are available to those interested. Experienced stage hands will also be needed for the technical staff.

## HOOP LEAGUE PLANS TOURNAMENT AND DANCE

The men's basketball league is planning a grand and glorious end for its most successful season. Plans are under way for a tournament to give some teams a chance to avenge earlier defeats. All teams will participate in the preliminaries which will be followed by quarter-finals, semi-finals and finals, and details of the tournament will be made public as soon as possible.

At a recent meeting of both the men's and girls' team representatives, a proposal was made to have a basketball dance sponsored by both leagues, and it was accepted by unanimous vote. It was also proposed that the final tournament game be held immediately prior to the dance in Hampton Armory, and this was also approved. While all details of the affair have not yet been worked out, it has been announced that the dance will be strictly informal - plaid shirts and sweaters preferred - the assessment will be one dollar, stag or drag, and the date will be Friday, March 23.

## BRAINBUSTERS INDOOR EVENTS MARCH 21

The first annual indoor meet of the Brainbusters Model Club will be held on Sunday, March 18, in the new Aircraft Loads Building in the West Area, from noon to five p.m. Entrants will be Class A gliders, Class A tractors or pushers and any size flying scale models, ornithopters or autogiros.

An entry fee of twenty-five cents will be charged for each event and at least three contestants must be entered in each event or it will be called off.



THE GREEN COW  
CELEBRATES AT THE ARMORY

by Lawrence

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## The NACA Anniversary

Celebration by the National Advisory Committee for Aeronautics of its 30th anniversary deserves more public attention than it is likely to receive. For it is hardly too much to say that this organization has made the greatest single civilian contribution to the impending American victory in the current war. Others, no doubt, will dispute that comparison; yet the NACA certainly has had a profound influence on the current achievements of American arms.

It would be unfair, of course, to ascribe all the progress in aviation since the committee's foundation to its efforts. The manufacturer, the inventor, the "flying fool" have made large contributions. But the NACA has been the means of bringing to fruition many visions of aerial progress which never would have been realized without its efforts. It may be said to have served along two lines—first, evolution of ideas someone else had without the facilities for experiment which would make them practical; second, the independent pursuit through experiment of improvements in aircraft structure and design.

The result has been outstanding superiority of American aircraft, civilian and military. Apparent superiorities exhibited by enemy planes at the beginning of this war have proved to be more apparent than genuine, and the challenges they have presented to American genius effected improvements to meet or surpass those features in which the enemy shone. The Mitsubishi fighter plane of the Japanese popularly called the Zero is an example. It could outfly and out-manuever the best we had at first; but ours were built to protect the flier and they were not. Today our pilots can match the Zero behind protective walls while his fast, flexible craft still is easy prey to bullet and flame.

Fortunately, while the NACA was conceived in a martial mood, its benefits have not all been military. The improvements it has effected for military craft have been applied to those that fly the paths of peace and service. In that field lies aircraft's true usefulness. Its adaptation to war is a perversion. And when peace returns the NACA still will labor along with the manufacturer and the "flying fool" to give us better, safer, more efficient aircraft for the great future of expanding air travel.



## NEW BOOKS

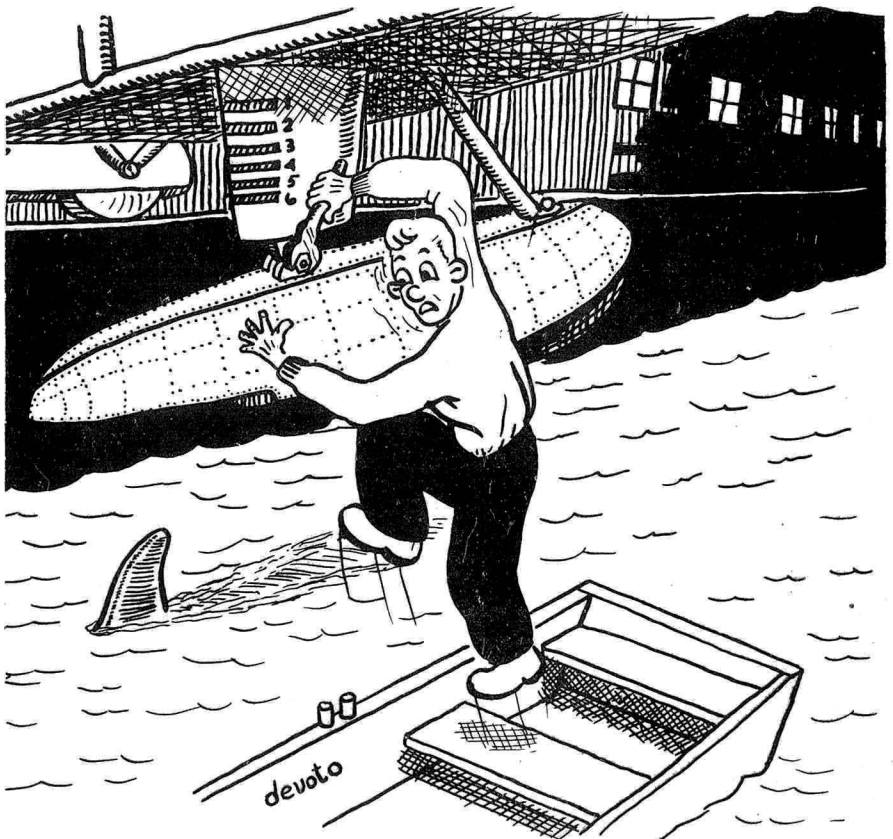
- 536.7 Sch5 Einführung in die technische Thermodynamik. By E. Schmidt.
- 510 W37e Elementary vector analysis. By C. E. Weatherburn.
- 510 W37 Advanced vector analysis. By C. E. Weatherburn.
- 517.5 N41 Eindeutige analytische funktionen. By Rolf Nevanlinna.
- 311.2 F53s Statistical tables for biological agricultural and medical research. By R. A. Fisher.
- 541.3 C42 Wetting and detergency. By W. Clayton.
- 621.384 Sch8 Experiments in electronics and communication engineering. By E. H. Schulz, and L. T. Anderson.
- 517.3 M24 Integration. By E. J. McShave.
- 621.384 H72 Physik und technik der ultrakurzen Wellen. By H. E. Hollmann.
- 517.5 St8 Lamesche-Mattheiusche und verwandte funktionen in physik und technik. By M. J. O. Strutt.



## GUARD your lips

What you do here  
What you see here  
What you say here  
When you leave here  
Let it stay here

# BUMMPPHUDGE



## HELP THE RED CROSS