

VOXAIR

AN AIRFORCE NEWSPAPER



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WINNIPEG, MANITOBA

AUGUST 11, 1961



The Blood Donor Clinic held at RCAF Stn. Winnipeg last week was successful in obtaining 657 donors. Three of the donors are shown registering, they are G/C J. F. Mitchell, Cpl. D. R. Randall who is giving his 30th donation and Sgt. K. H. Stephenson who is giving his 20th.

News and Views

Mats, the Military Air Transport Service of the United States Air Force, is often half-humorously referred to as the world's largest airline. That this underprivileged "airline" has been forced to operate without the benefits of jet aircraft has long been a source of discomfiture to its members. Expression of their feelings over operating world-wide a fleet of 996 propeller-driven aircraft has been constant and bitter. By Department of Defence definition, the MATS mission is to provide "strategic airlift to move men, weapons, and material in accordance with U.S. national strategy from one continent to another." Typical USAF criticism of their ability to carry out this role is evident in such open public pronouncements as "MATS is currently hampered in its reaction time by lack of jet transport aircraft."

While the desirability of modernizing MATS has been the subject of many discussions, no money was forthcoming until the Kennedy administration moved in. The new frontier took heed of the need and set the dollar wheels in motion to provide jets for MATS. By far the largest investment will be in the Lockheed C-141, now in the design stage, but in February of this year the USAF signed a contract with Boeing to provide 30 Boeing C-135A aircraft for "about 89 million dollars"; and the first aircraft was delivered on June 8.

Dubbed the Stratolifter, the C-135 is derived from the KC-135 tanker, of which about 460 are currently flying a refuelling role for the Strategic Air Command. The USAF is happy with its KC-135s

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Missile Defence

A ground readout station for the Missile Defence Alarm System (MIDAS) will be established at Kirkbride in England, it was recently announced by the British Government.

MIDAS is now under development by the United States and is designed to be a part of the North American Air Defense Command's warning system against the launch of intercontinental missiles. The system will consist of a number of high orbiting satellites equipped with infrared sensing equipment designed to detect ballistic missiles in the very early stages of their flight.

In making the announcement to the British Parliament, the government spokesman revealed that final agreements had been reached between the U.S. and British Governments concerning the details of costing and operation of the readout site. It will be located at the Royal Air Force Station at Kirkbride in Cumberland and will be operated by the Royal Air Force.

MIDAS III, a test vehicle, was placed in orbit on July 12 and is now circling the earth at an alti-

(Continued on page 3)

Let The Buyer Beware

"We started selling this refrigerator for \$250.00. The customer would make a \$50.00 down-payment. Then as soon as his weekly payments fell behind we would repossess it. We would then chop \$25.00 off the total price and sell it again. We must have sold and repossessed this same refrigerator over a half-dozen times. The last time we carted it out of somebody's house, it even had food in it." Quote by a former employee of a high pressure appliance store recounting his experiences.

"Suggestion Awards" Not Big Saving In DND

An estimated saving of \$313,072 in Department of National Defence operations resulted from the Suggestion Award Plan in the past fiscal year. According to the 1960 annual report, 1,568 ideas were submitted and awards amounting to \$14,117 were distributed to 248 civilian and service personnel.

The highest award during the year, \$1,500, went to Lieutenant H. Hargreaves of Naval Communications. He recommended the adoption of "Azograph" duplicating material and machines in communications centres. The new process removes the tedium and expense of recopying about 700 messages per day on multilith masters. Saving in equipment, maintenance and salaries in the department amounted to \$82,300 in the first year of operation.

The Suggestion Award Plan is a practical programme to promote efficiency and effect economies in the government. Some suggestions improve office methods, others eliminate fire and health hazards, standardize procedures, minimize paper work, save time and materials, improve designs and introduce new equipment. By providing an opportunity for employees working on a job to express their ideas the plan also tends to improve morale.

Granting awards for ideas has paid off in dividends in National Defence since the first submission in 1955. With the adoption of 789 suggestions, an estimated \$1,255,480 has been saved. About two-thirds of the suggestions submitted and approved in the department are for technical improvements. In one case an airman developed an improved soldering kit to overcome difficulties he encountered using conventional tools to repair intricate wiring systems in aircraft. This soldering tool, which was later applied to other complex equipment, reduced the time of maintenance by 66% and saved the department \$18,584 in the first year of operation. The airman received \$580 for his idea.

In another case a civilian techni-

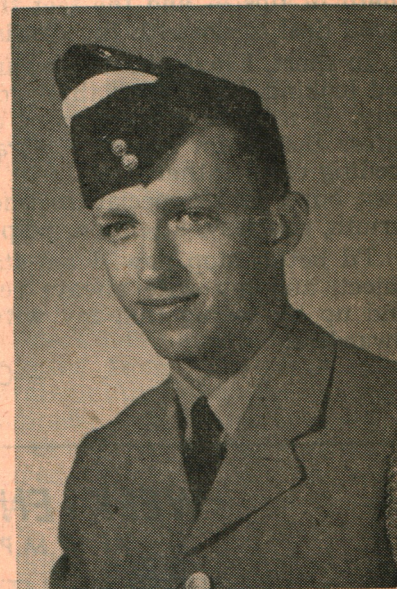
(Continued on page 8)

This method is not unusual and is practiced in almost every city throughout Canada and the U.S.A. Many of our own people have been abused in the same fashion by unscrupulous money lenders and other high pressure merchandise sales institutions.

One of the biggest sales activity right in our own city is the "Fly by Night" car sales companies. They pop up over night on every favourably located vacant lot in the city. They spend fabulous amounts of money advertising their "Seal of Approval" automobiles, their low-low down payments, and their 6% bank rate financing plan. The picturesque descriptions would tempt even the most level headed. The terms are

(Continued on page 6)

Cadet of the Week



F/C L. R. White SAT II B, was chosen as the Cadet of the Week for the period 24-28 July. He was born in Woodstock, Ontario and enlisted in the RCAF under the Reserve Officer Training Plan in September 1959. In September he will return to Queens University, Kingston, Ont., for his third year in Applied Science. His parents, Mr. and Mrs. R. W. White, reside at 630 McConnell St., Mattawa, Ontario.



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EDITORIAL CORNER

I Love Airline Stewardesses

Girls who get turned down when they apply for jobs with CPA or TCA as air stewardesses speak of having been given their "ugly papers." There is an idea abroad that a broad must be broad and also curvy to land these cherished jobs.

I am now an expert on the subject. I don't travel by air too often but I have made a special point of studying the airline hostess situation. (I had an aisle seat last trip, and I recommend that location to any gent planning similar research.)

I grant you there are no ugly stewardesses, but they are not raving beauties, either. I have known a few real peaches who were turned down; I have known some medium-attractive girls who were hired.

The point I am trying to get to is that I have never run across an airline hostess who wasn't bright, friendly, courteous, capable. It seems to me that whoever handles personnel selection for Canada's two great airlines ought to get a medal. They do a superb job. It would be interesting to know how they manage to select so many fine, even-tempered girls, who are so completely impartial in the manner in which they serve passengers.

It doesn't matter whether you are a homely old coot or an attractive young bachelor type — the girls treat you as if you were Lothario himself. Women travelling with a couple of youngsters find that the air hostesses are ministering angels. All this courtesy is provided without benefit of tips — and the fact that there is no tipping may even have a good deal to do with the consistent quality of the service.

In short, I love airline stewardesses. I don't mind them being quite good looking, but I don't think looks have much to do with their popularity. It is more a question of attitude and character and courtesy. I confess that I am a rather attractive male, in spite of thinning hair, receding chin, rather prominent Adam's apple, and a few other minor flaws, but I get no special treatment. Everybody gets the same deal... warmth, courtesy, attention, helpfulness.

I'd better stop now. I am starting to get really excited about this subject, and my wife always reads this column. So I think I'll just wind up by saying that my wife would certainly make a fine airline stewardess!

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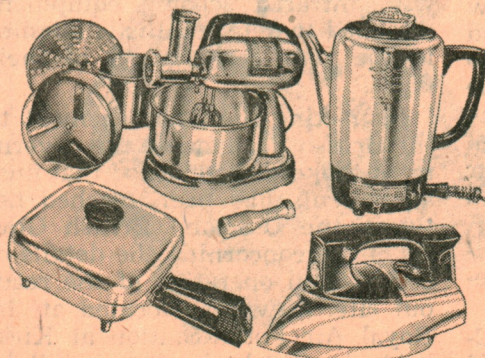
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Saludos Amigos! We made it—we're here at last, via Sault Saint Marie, Sudbury, Owen Sound and various intermediate places. A good trip, via an interesting route—and we're now in the middle of our two weeks of relaxation at that famous "salt centre" Goderich, Ontario, on the shores of Lake Huron. Not a bad spot at all—plenty of scenery (moving and otherwise), an abundance of that flavorsome "tall, cool ale," and of course Grand Bend only 30 miles away! Of course local attractions such as the "Harbourlite Inn," miles of sandy beaches, good restaurants (like the Esquire—where we are at the moment), and historical spots of local and national interest make this a really good place to spend our "relaxing time." Only trouble is—two weeks barely gives us time to see and do all we'd like to. (Got that Chief?)

* * * *

Speaking of historical attractions—they have a fabulous museum here—and of course there's the final resting place of the famous "Tiger" Dunlop—soldier, philanthropist, statesman—who virtually tamed the wild frontier single handedly some 150 years ago in this region. He was probably the Davy Crockett of Western Ontario—a real tiger in every sense.

* * * *

GODERICH GUS says: "Love is like a fire—it can warm your heart, or it can cook your goose!"

* * * *

We were speaking to some of the members of the Airwomen's Club a couple of weeks ago—and heard what we consider to be a legitimate beef. Seems the girls would like to have the occasional "informal" type dance—(beachcomber style)—but all efforts to get one approved have failed for many months. We know that dress regulations must be observed—but it seems to us that if "Club 61" members are allowed to have such dances, then there is no just reason why the AW's shouldn't be allowed the same privilege—even on a reduced scale. Perhaps this could be looked into—and the fairer members of the Station given the break they deserve.

* * * *

PEERLESS PATSY says: "A boss doesn't mind his secretary throwing her weight around—provided that it lands in his lap!"

* * * *

Before we left on our trip, we took in the Toronto-Winnipeg football game. We were not very impressed with Winnipeg's showing—but that Hal Ledyard was a real ball of fire—with his accurate running passes and fine footwork. We think Winnipeg looked fairly weak in many places—especially on pass defence against Tobin Rote—but they did win the game, and should give Winnipeg fans plenty to cheer about—especially in the Grey Cup game!

* * * *

CATHY CO-ED says: "A diploma is an official notice to start looking for work."

* * * *

A note to all our uniformed friends—the winter order of dress is not too far away—might be a good idea to check over the "blues" and make sure they're in good shape for the "long cold season"!

* * * *

We see cadets wearing the new flat hats—good idea—they look sharp and add a great deal to the smartness of the uniform.

* * * *

That's about it for today—time to soak up some sun again—have fun all you slaves—and we'll be back next week we hope—with another attempt to brighten your day. (And THAT'S a joke in itself!) Meanwhile, remember old WAG's theory that: "Man cannot live on bread alone—even if he knows which side it's buttered on!"

STATION LIBRARY

Station Library have received the following new books:

FICTION

<i>So it was Just a Simple Wedding</i>	Sara Kasden
<i>In a Summer Season</i>	Elizabeth Taylor (no relation)
<i>Saturday to Monday</i>	Ruth Rehmann
<i>Lore of the Wreckers</i>	Birse Shepard
<i>Take a girl like you</i>	Kingsley Amis
<i>The Golden Weather</i>	Louis Rubin
<i>Mothers and Daughters</i>	Eva Hunter
<i>The Shateau</i>	Wm. Maxwell
<i>The Incredible Journey</i>	Sheila Burnford
<i>Paths of Love</i>	Vercors
<i>The Last Summer</i>	Boris Pasternak

SPORTS AND TECHNICAL

<i>Guide to Water Skiing</i>	Tom Bartlett
<i>Technique of Motor Racing</i>	Piero Taruffi
<i>Motors Auto Repair Manual 1961</i>	

MYSTERY

<i>Night of Wenceslas</i>	Lionel Davidson
<i>Overbury Affair</i>	Miriam DeFord

MISSILE DEFENCE

(Continued from page 1)

tude of about 1,800 miles. Although inaptly termed "a spy in the sky," MIDAS cannot be used for any purpose other than as a burglar alarm against already fired ballistic missiles. Infrared sensing devices cannot discriminate targets below the atmospheric envelope of the earth because of the background of infrared radiation being given off by the earth and everything on it. This envelope is considered for practical purposes to extend up to about 60 thousand feet altitude.

The readout station at Kirkbride will be one of three positioned adjacent to stations of the Ballistic Missile Early Warning System. Information gained from MIDAS will complement that provided by BMEWS. The two systems working together will give about 20-25 minutes warning of the launch of ballistic missiles.

With the BMEWS system alone, Canada and the U.S. will have about 15 minutes of warning after ICBM launch. Britain would have about five minutes of warning.

In addition to providing greater warning time, MIDAS will make it more difficult for an enemy to launch a successful surprise attack on the western strategic deterrent forces.

Announced agreements on construction of the Kirkbride MIDAS readout station state that the United States will provide and install the special equipment for the station and the communications required to link it with the United States. The United States will defray the initial cost of the technical works services required to make the station operational. The United Kingdom will repay these costs within an agreed limit, after the station becomes operational.

The United Kingdom will also provide the land, domestics, accommodations and certain existing buildings, as well as communications and equipment required to link the station with British authorities.

The United States will pay for spare parts for the site for the first five years of operation. The United Kingdom will pay for maintaining the equipment as well as other running costs of the station.

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Two of three planned sites for the Ballistic Missile Early Warning System are already in operation. The site at Thule, Greenland went operational in October, 1960. The station at Clear, Alaska provided its first information to the NORAD Combat Operations Center in Colorado Springs on 1 July 1961. The third site is being constructed at Fylingdales Moore in Northern England. It is planned for operational use in late 1962.

Information from all of the sites is passed on an instantaneous basis over special communications systems to the NORAD Combat Operations Center and is further distributed from that point to the Strategic Air Command in Omaha, Nebraska and the Royal Air Force in Stanmore, England. Data received from the MIDAS system will be routed over that same system.

Initial capital costs of the Kirkbride readout station will be about 5-7 million dollars for the United Kingdom and about ten million for the U.S.

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NEWS & VIEWS

(Continued from page 1)

so there is little to do to change the tanker into a cargo carrier. In fact the first C-135 rolled down the tanker line at Boeing's Renton, Seattle, plant until it was decided to make a cargo carrier out of it. In fact this first machine still has the fuselage bulge and window for a refuelling operator, and all C-135s have provision for the transfer-fuel tanks. All dimensions are the same as the tanker, a descendant of the original prototype "dash-80" 707 which first flew in July 1954.

Internally, provision is made for a crew of six (three pilots, navigator, engineer and loadmaster) and for 126 seats or 44 litters and 56 walking patients. Comfort is not held a prime requisite, since sound-proofing has been held to a minimum and of windows there are none. The expense for a design change involving windows for the troops overcame any desire to let the latter see where they were going. This is a chilling thought on an across-the-world mission and it is likely that the 126 souls transported this way will have little desire to stay inside once their destination is reached, even if it means going to war.

The C-135 has a metal floor, with a cargo-pallet transfer plate abreast of the large loading door already fitted to the tanker version forward of the port leading edge. In this way, pallets can be swung up through the door and then right-angled down the fuselage. Payload capacity is billed by Boeing as 55,000 lb. for a non-stop distance of "more than 4,000 miles" or 35,000 lb. for "more than 5,000 miles." Boeing persistently claim a 600 mph capacity for their Stratolifter, but MATS is more conservative and refer to 460 kt or 529 mph undoubtedly a realistic cruise speed at an average cruise altitude of

35,000 ft. MATS list "optimum payload as 38,000 lb. and maximum payload as 89,000 lb. MATS give the range with optimum payload as 3,200 n.m. (3,600 miles). Gross weight is 272,000 lb. Aircraft manufacturers can sometimes be accused of being over-optimistic in their presentation of performance figures, while the users have to face the realities of day-to-day operation.

Production rate for the C-135 is given as two per month. The first 15 are to be powered by the time-proven Pratt & Whitney J57-P59W, producing 13,750 lb. take-off thrust with water augmentation. The second production batch of 15 will use Pratt & Whitney TF33 turbopfans (JT3Ds in civil life), producing 17,000 lb. take-off thrust and giving and approximate 15-20 per cent improvement in efficiency over the P57. (As we go to press, \$21m is ear-marked for TF33s to improve the first 15 aircraft.—Ed.) MATS hopes are high for their initial order of 30 machines being expanded by an additional 20, to make 50 in all. This would absorb another \$60m and, despite appearances to the contrary, such money does not come easily.

In a comparison of performance capability between the propeller-driven MATS of today and the jets coming up, Lt.-Gen. Joe Kelly, MATS Commanding General, said: "Civilian jet aircraft of this general type (a reference to the 707) demonstrated their high efficiency on the UN Congo airlift by flying the round trip between Europe and the Congo in a single day—while the eleven-year-old C-124 Globemasters of MATS, allowing for refuelling stops and necessary crew rests, required almost five days for missions of the same distance." The general sounded quite proud to be heading what would one day be the world's largest jet airline.

CARIBOU PAYLOAD INCREASED

The certification of the DHC-4A Caribou at an increased gross weight of 28,500 lbs. to CAR 4b transport category has been announced by The de Havilland Aircraft of Canada Ltd.

The Caribou first flew in 1958 at a gross weight of 24,000 lbs., and is now in service with the U.S. Army and the RCAF at a gross weight of 26,000 lbs. The increase of 2,500 lbs. to the allowable weight has been accomplished with an increase in the aircraft's structural weight of only 70 lbs.

The fully equipped commercial Caribou can carry a payload of 8,765 lbs. over a range of 200 nautical miles, or 5,560 lbs. over the maximum range of 950 nautical miles leaving VFR fuels reserves.

Despite the increase in gross weight, the Caribou still retains its STOL capabilities. At sea level, standard day, zero wind, the 28,500-lb. Caribou can take off in 725 feet and clear a 50-ft. obstacle in 1,185 ft. For the 26,000-lb. version, take-off distance is 540 ft., distance over a 50-ft. obstacle 1,020 ft.

WARTIME EMERGENCY SITES

Prime Minister Diefenbaker has announced that tenders are being called for the construction of wartime emergency sites for government in Manitoba and Nova Scotia.

This announcement supplements that made by the Prime Minister on April 19. At that time, plans respecting British Columbia, Alberta, Ontario and Quebec were announced. The site in Manitoba will be at Shilo, and that in Nova Scotia at Debert.

Decisions have also been made regarding the emergency sites in New Brunswick and Prince Edward Island. These will be at Camp Gatetown and at Charlottetown, respectively. The location of such sites in Saskatchewan and Newfoundland is under review and a statement regarding them will be made in due course.

These centres are designed to provide an operational capability for the small group of federal, provincial and army personnel who would direct emergency measures within the provinces. While they are not designed to give protection against nuclear explosions, they will be constructed in such a manner that operations can be carried out despite the presence of radioactive fallout. The purpose is to establish centres where communications can be reasonably assured and from which necessary information and instructions to local communities and the general population can be given.

RESEARCH INTO LOW-SPEED CONTROL

A USAF test programme to investigate new and improved techniques of flight path control for recovery and landing of advanced aircraft having low lift/drag ratios, has been initiated in America. The system, known as LALSC (Low Altitude, Low Speed Control) has been tested with a specially modified North American Super Sabre designated NR-100F91-Na.

Flight investigations are carried out in constant speed approaches at glide angles ranging from 2° to approximately 16°. The object of this is to determine the best method of holding required approach speeds for various path angles, using all possible drag and lift devices at the disposal of the aircraft, such as throttle control, wing flap modulation, dive brakes, boundary layer control and thrust reversal.

The LALSC system-changes in the NF-100F provide the craft with either a manual or automatic let-down and flare-out computing system which allows the aircraft to fly a predetermined glide path manually selected by the pilot. This is accomplished by the installation of a glide slope measuring system, and a control air data system, plus modifications to the existing automatic flight control system.

The aircraft's J57-21A engine has been modified by removal of the afterburner and a Rhor thrust reverser installed. The latter gives airspeed control during glide-path approaches in descents ranging from 12° to 16°, and reverse thrust braking of the aircraft during landing run.

An enlarged perforated speed brake measuring 33 sq. ft. has also been installed. During any manual operation, this speed brake can extend to a maximum of 30°. When operating under the automatic flare-out system and with the speed brake in "automatic," however, the brake will extend to 45°.

At "flare trigger" (altitude when flare-out actually begins), the speed brake retracts completely. Should the manual speed brake system be in operation, the 30° extension could still be maintained. By this means the system ensures that the over-sized speed brake does not touch the runway during any landing.

Other changes to the aircraft include modified wing flaps, incorporating boundary-layer control air ducts, installed to improve wing flap efficiency at low speeds. The bottom area of the fuselage has been redesigned to accommodate four radar altimeter antennae; a radar altimeter antenna pod for the forward pair of antennae has been added under the nose. A modified tail skid provides clearance for the thrust reverser during landings.

This interesting research craft has also been used for the simulation of the landing approach of a boost-glide vehicle such as Dyna-Soar. These tests may lead to the elimination of the need for long runways for aircraft of the X-15 type.

For these tests, the thrust reverser is activated at about 6,000 ft., the speed brake lowered and, when the craft is near to touch-down, the wing flap boundary-type control is put into action. The overall effect of this is to produce the lift/drag condition of a Dyna-Soar.

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SPORT TALK

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BASEBALL TEAM LOSE

The Station baseball team, in their only game last week, were slowed down in their bid for the final playoff spot in the Winnipeg Inter-Parochial Baseball League.

After falling behind 4-0 after four innings of play, the RCAF club came battling back to come within one run of tying the score, only to have the second place Sacred Heart nine erupt for five big runs in the top of the seventh to break the spirit of the locals and gain a 9-3 decision.

Sacred Heart sent 10 batters to the plate in that inning, the first eight men reaching first base safely. Victims of the barrage were Dan Maki and Bill Oliver, who between them, gave up four hits, two bases on balls, a hit batsman and an error afield. Wally Jones, in right field, snuffed out the rally by pitching a line drive and throwing out the runner from third base attempting to score.

Eric Boyd started on the mound for the losers and was charged with the defeat although giving up only three hits and four runs, two of them unearned, in the five innings he toiled. He was the victim of poor support from a usually reliable infield that came up with four errors.

CUMMINGS OUT

Boyd, once again because of a broken blister, gave way in the sixth inning to Manager Gregg Cummings. Cummings threw two pitches, then stopped a line drive on the end of his finger, calmly picked up the ball and threw out the base runner scampering for first. After this play, Cummings retired from the game and any others to be played, the result of a broken finger on his pitching hand. Maki and Oliver, both having off-nights, finished up the disastrous evening.

Offensively, what there was of it, Muck Reading was the leading batter for the airmen with two hits in four attempts. Jones had a hit and a walk in his only two at bats and Fred King lined out a

double for the losers. The RCAF team, who have had difficulty all season with southpaw pitching, managed only six hits and eight batters went down on strikes.

Still with a very good chance to make the playoff scene, the future of the team doesn't look too bright. Several key players, at the moment, are on leave, TD and transfer, with more to go. Boyd, Maki and Webber shall represent the pitching staff and will have a makeshift and re-shuffled team behind them.

Cummings, quite disheartened about the whole situation, suffered more grievances when told by medical authorities that due to shattered bones in his finger, he is finished with active participation in baseball for all times.

INTER-SECTION FASTBALL

With the Inter-Section Championship Team scheduled to play Stn. Gimli on Sat. 19 Aug. at Gimli, the Inter-Sec. League will be playing at the fastball diamonds here almost nightly.

Playoffs for the top four teams in the standings shall commence with a double-header at 1400 hrs. on Sun. 13 Aug. The third game of a best of three semi-final series, if necessary, will be played the following evening. With a day's rest, the finals shall start on Wed. 16 Aug. and carry on each night until a winner is declared.

The MSE section representatives, at the moment, are situated at the top of the standings, closely followed by ANS/Nav. The Flight Cadets, ANS/Elect., I. & E. and Telecom are currently fighting it out for the last two playoff spots.

Taking nothing away from other top teams, the MSE nine are in top spot mainly on the pitching of Steve Chmara and F/L Jack Ford, coupled with the steadiness of Art Lamoureaux catching. The remainder of the team, with a couple of exceptions, being a little better than average. Another reason for the high showing is when a team can get fan support each game to the tune of 15 to 30 boosters, it

does nothing to harm the enthusiasm of the players on the field.

As previously written, the eventual winners of the playoffs shall be paired against Gimli on the 19th for the regional supremacy, with the winner of this series travelling to meet the winners of the Moose Jaw-Saskatoon bout for the Training Command Championship in the west.

Facts On RCAF Aircraft

CF104 STARFIGHTER

If a Starfighter took off in the light of early dawn from Ottawa, flying non-stop to Vancouver, it would beat the sun to the West Coast.

The Starfighter's refrigeration system is capable of producing ten tons of ice per day.

Due to the CF104's speed, the usual type of decals squadrons affix to their aircraft blister off the Starfighter in flight. Insignia have to be stencilled on with paint, and even this doesn't last too long.

The power output of the Starfighter's electrical system is almost equal to that of a 500,000 watt radio station.

If the electrical wiring contained within the slim airframe of a CF104 were stretched in a straight line, it would extend a distance of nine miles.

The Starfighter is 54 feet, 9 inches long, 21 feet, 11 inches wide and powered by one General Electric J79-GE-7 turbojet engine with afterburner.

CC106 TRANSPORT

The CC106 is the largest aircraft ever built in Canada. It was built by Canadair Ltd., of Montreal.

The ventilation rate of the pressurization system is sufficient to effect a complete change of air in the cabin every 2½ minutes at sea level and about every four minutes at 33,000 feet.

The first CC106 was successfully test flown in Nov. 1959.

Power of 5,739 h.p. is developed by each power plant. The power plants weigh only 2,200 lbs. each.

With normal RCAF fuel reserves the aircraft can transport a 30,000-lb. payload 3,900 miles at a speed of 370 mph. With the same reserves and cruising speed, it is possible to transport a 55,000-lb. payload 1,800 miles.

The wingspan is 142 ft., the length 136 ft., and the gross weight is 148,000 lbs.

CP107 ARGUS

The Argus generates enough electricity to provide complete power for 60 six-room houses.

The Argus carries enough fuel to run the average family car more than 130,000 miles—more than five times around the earth at the equator.

The Argus is equipped with enough wire to stretch from Montreal to Plattsburg, New York.

Jigs used in the Argus wing construction are so large that workers must communicate with each other by telephone.

The fuel alone carried by the Argus weighs almost as much as two fully loaded DC3 aircraft (Dakotas).

More than 18,000 drawings were made by Canadair's engineering division using approximately 432,000 square feet of paper . . . equal to almost 10 acres.

More than 70,000 tooled parts are required in the manufacture of the Argus.

The weight of the first aircraft to fly half a century ago was 750 lbs., including gasoline and pilot. The Argus takes off at a gross weight of almost 150,000 pounds . . . 250 times as much.

More than 100 electric motors, generators and other rotating electrical machines are required to operate various systems of the Argus.

The tail of the Argus is 36 ft., 8½ ins. from the ground . . . equal to the height of a four-story house.

Gasoline carried by the Argus would almost fill three quarters of a standard railroad tank car.

Usable floor area of the Argus is about 900 square feet . . . equal to a small house.

The heating system of the Argus supplies enough heat to service 28 six-room houses in the depth of winter.

The CP107 has a wingspan of 142 feet, a length of 128 feet and a gross weight of 148,000 pounds. It carries a crew consisting of three pilots, three navigators, two flight engineers and seven communications and electronic operators.

The four-engined Argus is capable of flying more than 1,000 miles from base, remaining there for considerable time on patrol before returning to base, and if necessary, can divert to an alternate airfield within 500 miles.

NORTH STAR

The North Star four engine long-range transport was built by Canadair Ltd., of Montreal, and is the Canadian version of the U.S. C-54.

RCAF North Stars flew 599 round trips from Canada to Tokyo during the Korean Air Lift.

The North Star, in addition to its five crew men, can carry 45 combat-equipped troops, or 36 liter cases.

The North Star is powered by four Rolls Royce Marlin engines, producing a total of 7,040 horsepower. It is 93 ft., 5 ins. long, and has a wingspan of 117.5 feet.

North Stars are now engaged in the supply and troop movements of the United Nations Emergency Force in the Middle East.

RCAF North Stars have logged over 250,000 hours with no fatal accidents.

During their twelve years service with the RCAF, the North Stars

(Continued on page 8)

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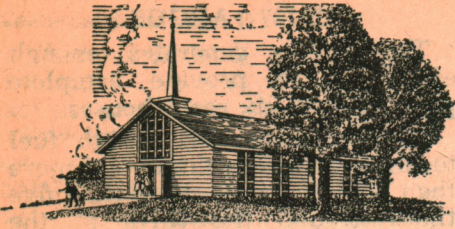
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Chapel News

PROTESTANT CHAPEL NEWS

Divine Worship—August 13th at 1100 hours.

* * *

F/L the Rev. F. P. DeLong arrived this week to take up his duties as Assistant Protestant Chaplain at Station Winnipeg. Padre DeLong is a Maritimer, who is a graduate of Dalhousie University and King's College. Ordained in 1949 Padre DeLong spent five years in the Diocese of Fredericton before entering the RCAF. Since joining up the Padre has served at Uplands and Chatham. Padre DeLong is married and has three children. We extend to Padre DeLong and his family a sincere welcome and our best wishes.

* * *

The Sacrament of Holy Communion, according to the rite of

the Anglican Church of Canada, will be celebrated each Sunday during August at 0900 hours, Padre DeLong officiating.

MAN'S WORST — GOD'S BEST

There was a time in the not-too-distant past when men were forever being reminded of the fact that they were sinners, and those who thought that they had overcome this ancient view of life were guilty of self-righteousness. Not much is said about sin these days, even though it lies at the heart of all our problems. We have generally soft-pedalled every reference to this major cause of man's misery. Richard Niebhur has put it this way: "Millions have been brought up on the pathetic faith in a God without wrath calling a man without sin to a kingdom without judgment through a Christ without a cross."

The problem arising from our confusion and perplexity, particularly that of frustration, and our inability to make much headway on the road to peace, can be solved by facing squarely the basic fact that deep down in human nature there is something, both original and acquired, which turns man's best into his worst and confounds all his finest schemes and best dreams. As Shakespeare in Julius Caesar makes Caussius say: "The fault, dear Brutus, is not in our stars but in ourselves."

No generation of man and woman in the history of the world has enjoyed greater advantages, better opportunities and broader possibilities than this generation. Never before has there been such a degree of mastery over the forces of nature. Mechanically and materially we have enjoyed and continue to enjoy a rich life. But what has happened? Men invent aeroplanes and we get guided missiles; they discover new marvels in the field of chemistry and we get deadly gas and all kinds of devilish booby-traps. Men smash the atom and get Hiroshima, Nagasaki, and wide-scale fear.

We have mastered physical nature in ways undreamed of in the past, but we are still up against human nature with all its deep-rooted evil and its potential good.

If we are honest we must conclude that man as he is cannot make a world fit for decent men and women to live in. Any attempt to build a new order on the foundation of human nature, that will guarantee to all without exception a full life, is doomed to failure. To expect a change in human nature is a great act of faith; but to expect a change in human society without changing human nature is sheer lunacy. This is a truth which we must somehow face.

The approach to life recorded in the Bible is a realistic one. There we see sin for what it is: not ignoring it, or compromising with it, or rationalizing it out of existence, but calling a spade a spade and helping us to realize our need for forgiveness and redemption. The New Testament record of the life of Jesus Christ tells us that he came "to save his people from their sins." Tell me that he was a brilliant human teacher, a dynamic moral reformer, and that I must be like him, and I am stopped in my tracks, for I know my own limitations. But tell me that he is

the Son of God, the glory and power of God in human form, who came for my redemption! that he came into the world in order to win it for God; to break the power of sin, to show God's power and love. Tell me in brief that Jesus is the Christ, the Saviour of the world, then I can rejoice for through Him I have hope. Cynics may smile and non-believers argue, but nevertheless this is the great glory of Christianity: it has brought good out of evil and has made even the wrath of man to praise God.

A good egg doesn't stay good indefinitely: It either becomes rotten or else it hatches into something finer. So too with human nature: it either becomes perverted and decayed, or else it grows and develops into wholesome life. Christ came in order that we might have wholesome life: He came in order that we might receive forgiveness of sin and to claim us for His kingdom. Because of Him man's view of life has been widened to eternity. Our destiny is not death and the grave, but life and victory.

So long as man's interpretation of life is from the standpoint of himself as its centre, and this is precisely where we stand today, so long will God's revelation in Christ seem foolishness. Yet because it is such foolishness in the sight of some, nevertheless Christ has been and is for millions the full revelation of God. When He is accepted and known as the Risen Lord, as he was to the early disciples, man's sin and hopelessness is overcome by God's best. This interpretation of man's destiny is the fruit of faith which is really persuaded that nothing shall be able to destroy us or separate us from the love of God as we know it in Jesus Christ our Lord.

PADRE R. L. SCHNEIDER.

Sunday School Teacher Transferred

Flight Lieutenant D. R. Stewart of Dartmouth, Nova Scotia has been transferred to 104 University Squadron, University of Toronto, as Resident Staff Officer for the RCAF.

Prior to enlisting in the RCAF in May 1949, he obtained his Bachelor of Arts Degree at Dalhousie University and received his Navigators wings in March 1950 at Summerside, P.E.I. Since this time he has served the RCAF with 405 Maritimes Patrol Squadron, Greenwood, N.S., Air Material Command Central Experimental and Proving Establishment, Suffield, Alberta, and for the past four years was an instructor at the Air Navigational School at Winnipeg.

His parents, Mr. and Mrs. Arthur Stewart, reside at Curry's Corner, Windsor, N.S. He will take up residence in Toronto with his wife, the former Anne Kruczko of Maple Creek, Saskatchewan and his three children.

BUYER BEWARE

(Continued from page 1)

fabulous, the salesman's verbal guarantee is terrific. Twenty-five dollars down and within five minutes your mobile. Two weeks and 1000 miles later, the engine falls

out. The clunking transmission no longer clunks; it grinds along with the differential where the sawdust and grease have now worn out. So back you go to the car lot. You find that, although the verbal guarantee was exceptional, it didn't mean anything because it wasn't specified on the sales contract. Or that the 30-day guarantee is really a 30-day 50/50 Warranty, or even worse, a Laundramat is now located where "Happy Harry" used to be, and unless you want a car wash they can't help you. The story however is not complete. Although you have bought a "Clunker" you're still tied to a "guilt edge" contract with some sales finance company for the next umpteen months. If you default, they will repossess the "Clunker," sell it for a song and charge you the difference. Brother you've been taken, but what can you do? Nothing. The moral of this story is to deal with a long established reputable car company in the first instance, and finance through your Credit Union or bank. Then you'll know you've got the best deal.

No family's library is complete without a \$400.00 set of encyclopedias. I imagine if all the encyclopedias were collected that are gathering dust in our homes, we could half fill 16 hangar. However, when the high pressure salesman comes to your door, it's his appeal to unselfishness that gets him the sale. He appeals to the parents' unselfish attitude. They shouldn't deny their children an education. They don't want their children to be morons. Even though the oldest is only five, he may have occasion to use the encyclopedia with his "Dick and Jane" reader, etc. The salesman does not talk about the contents of the book too much, he praises the excellent, sturdy, leather bound cover. The salesman is aware that these books will see very little use therefore, if they must gather dust, do it in style. He convinces Father and Mother to buy a \$50.00 bookcase to store the books in. All this he says at no interest or carrying charges over some two to three years. Provided junior doesn't use the 30 volumes as a step ladder to reach the cookie jar, or as extra weight for his electric train, they remain in the bookcase. What you have bought (probably at a time it is of least value to you or your children, and at a time you can least afford it) is a very expensive piece of living room furniture. The station library carries three complete sets of encyclopedias for the use of RCAF personnel, and each school has at least one good set for their pupils' use.

Beware what you are signing your name to and committing yourself for. Direct your interests toward essential items first. Budget for emergencies by saving in your Credit Union. If after you have done this there is still available cash, look for a good solid buy on such items as TV sets, cars, Hi-Fi sets, etc. If you are short, see your Credit Union first. You will be glad you did.

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VAN'S VERBALITY

By WO1 J. W. VAN BUSKIRK

TWENTY OR MORE

Coming back from town one dark night last week after attending a movie with a companion, we observed, when passing a cemetery, a moving light that appeared quite close to the ground. Not having any personal interest in moving lights in cemeteries in the dead of night, I scoffed it off as being a lightening bug convection or some such nature phenomenon. However, my dour associate, much to my surprise, suggested that we investigate.

This fellow was crazy! Here we were returning from a late movie that involved werewolves and vampires and he was brazen enough to suggest such a thing to me. I had hated myself all evening as it was, for having accompanied him to that type of movie and was hardly over the nerve racking, small explosions caused by a fellow behind me at the theatre cracking peanuts. Now I was suppose to visit this graveyard? "No me?" whispers I. "Don't be chicken," he taunted, and that of course was the fatal thrust. 'can't stand a dare. Perhaps because of some small boy gland that didn't grow up, I don't know, but when I am dared, I become the bravest man on my street.

We parked the car about two hundred yards away which appeared like a safe distance and scuttled back to the cemetery gate that strangely enough was partly ajar. I think that if it had squeaked when we opened it further to allow our entrance, I would have high-tailed it back to the car like a native on a safari at the first sign of a tiger. However, it eased open quietly, too quietly for my liking nevertheless unscary.

The light had disappeared by this time so we mummified ourselves for a few moments until it became visible again. It was quite a ways over to our right so we inched ourselves towards it as prudently as possible.

A figure, small and gnomelike in the frequently interrupted rays of the flashlight, was observed moving slowly along a pathway. The light was being played alternatively on both sides of the path as though some ritual or design was being carried out.

"Hello there!" my companion barked at this unknown creature before I could clamp a hand over his mouth. "What are you doing?" After a slight hesitation, I suppose brought about through being startled, a young boy's voice replied. "Looking for my jack-knife!"

Now this took the cake for an answer. Had he said that he was robbing graves or some other nefarious deed, I would not have been the least bit surprised. But, looking for a jack-knife, that seemed to be about the most inconceivable answer that he could have used.

We approached the boy who was about twelve years of age. He looked quite apprehensive but did force a kind of a silly grin on us. "I came here today," he explained, "to bring some flowers for my sister's

grave. I was using my knife to loosen the ground and then when I later got home, it was missing. I've looked everywhere but I haven't been able to find it." "Are you not a bit timid about coming to a cemetery this time of night?" I inquired, "all alone in the dark with no one else around?" "Oh, there's lot's around here," he informed, "I guess I must know twenty or more!"

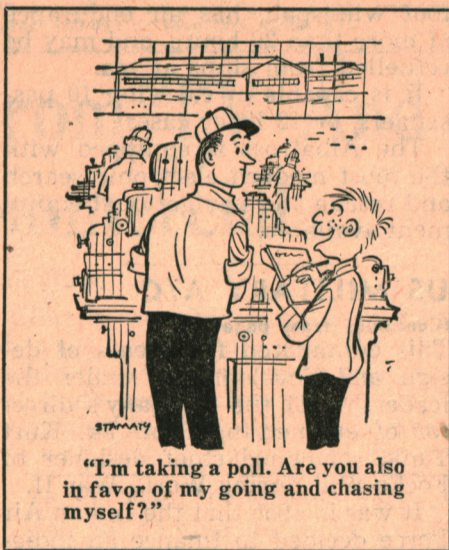
That did me! I pulled my coat collar up a bit higher around my neck on account of the cool night air and headed back to the car.

US Military Aircraft

The following notes embrace some of the recent major decisions and discussions on military aircraft emanating from the Pentagon:

U.S. AIR FORCE

By far the largest single vote in the Fiscal Year 1962 (beginning last Saturday) budget for military aircraft is \$525 million for strategic bombers. This sum would purchase and operate for five years approximately 23 B-52Hs, 20 B-58s or 80 silo-based Minuteman missiles. Defense Secretary McNamara has publicly expressed his opposition to substantial procurement of more manned bombers, and the money may, in fact, further accelerate the deployment of the fixedbase Minuteman. The train-borne Minuteman suddenly appears less attractive, and, as already reported, there is no money for it in FY62. Largest single vote for a named type of aircraft is \$397.4 million for the Republic RF/F-105D (\$27.5 million of this being for the RF), the unit



price being \$1,263,000. Next largest sums are \$236.7 million for 83 Lockheed C-130Es, \$230 million for an undisclosed number (about 65) of Boeing KC-135As, and \$218 million for four additional B-70 test aircraft. The last-named figure shows that the massive lobby urging acceleration of the 2,000 m.p.h. bomber has been defeated. Total USAF procurement amounts to 573 new aircraft, which will cost \$3,547 million including direct support facilities.

U.S. NAVY

After lengthy negotiations, it appears that the Navy is likely to ask for the Grumman Gulfstream, probably designated RF-1, as a replacement for approximately 200 Douglas R4D (DC-3) transports. Not only is Grumman a Navy plant but the Gulfstream flies San Francisco to Hawaii non-stop (a requirement) and its capacity is more in line with that of the R4D. The competing Fairchild F-27 is more costly to operate over longer stages, and its choice would mean re-opening a production line at a low rate of output; moreover, 40-seat requirements are already "adequately met" by the R4Y (Convair 340). Whichever aircraft is adopted, the Rolls-Royce Dart may be replaced by the General Electric T64 (Flight, January 13), for the obvious political reasons of having a US source and helping to justify the heavy Navy investment in this engine. There is no FY62 money for the A3J Vigilante, although North American's backlog of \$296 million for the 52 aircraft outstanding is exceeded only by McDonnell (\$361.6 million for 144 Phantom 2s) and Grumman (\$391.2 million for 113 aircraft, principally A2F Intruders and W2F Intruders and W2F Hawkeyes).

U.S. ARMY

Way out in front is Bell Helicopter, with \$67.6 million for no fewer than 242 of the improved HU-1B Iroquois. The Grumman Mohawk accounts for \$42.8 million for 48 aircraft, \$12.6 million more than do the same number of de Havilland AC-1 Caribous. Last month it was stated at Ft. Eustis that 61 Caribous have so far been ordered from Downsview, and that "the Army would like to procure about 300."

JOINT SERVICE

The long-drawn-out negotiations for a V/STOL fighter programme

appear to have resulted in the USAF being cleared to award a major study contract for an air-superiority defensive machine (probably M2.5, and 2,500 n.m. ferry range) while the Navy go ahead in conjunction with the Army and Marine Corps on a tactical strike aircraft (not more than M2).

INDIA'S JET FIGHTER FLIES

(Flight 6 Jul. 61)

On Saturday, June 24, India became the sixth nation to have a supersonic aeroplane. On that day Wg. Cdr. Suranjan Das, famous for his evaluations of many British and other jet fighters, took the Hindustan HF-24 into the air from the airfield adjoining the main plant of the Hindustan Aircraft Factory.

(Continued on page 8)

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All ads of a commercial nature will be 13c per agate line.

Ads will not be accepted by phone.

Classified ads will be accepted until 1600 hours on Monday of each week for the current issue of VOXAIR.

Classified ads of a non-commercial nature will be free to all employees of R.C.A.F. Station Winnipeg.

Persons desirous of having their ads appear in more than one issue must resubmit the ad each week they wish it to appear.

AUGUST SPECIALS

Lub Job	\$ 1.25
Oil Change (4 qts.)	2.40
Trans. Change (Std.)	1.50
Diff. Change	1.50
Check Distributor & Timing	2.50
Front Wheel Pack	3.00
Check Electrical System	2.00

Regular Price	\$14.15
Special Price	\$ 9.95

1c per gallon discount on gasoline to all station personnel, with station plates on their car. We specialize in European car repairs. European trained mechanic on duty.

STANMORE TEXACO SERVICE

Portage Ave. and Whittier St.

Kirkfield Park VE 2-2660

RADIO - TELEVISION SERVICE

Television - Hi-Fi - Radios - Appliances. Fast, reliable, guaranteed service. Service call—\$2.50. "L" Electronics. VE 7-1827.

RADIO-TELEVISION SERVICE

Fast expert service by qualified technicians. Service calls \$2.50. A.V.A. Television. Phone anytime, JUstice 2-5063. Ask for Lem Murphy.

TV ANTENNA INSTALLATIONS

Channel 12 Special. 10 ft. — \$29.95. 20 ft. — \$39.95. Reserve your installation today. AVA Television. Phone JU 2-5063.

KINDERGARTEN

We have openings for kindergarten children — for afternoon class — starting Sept. 6th, 1961. Please phone VErnnon 2-5374.

FOR RENT

To Rent or Sublet with option to sign new lease 1st Oct., 1961 — one bedroom suite available 1st Sept., 1961. 2425 Portage Ave. Strathcona House — one blk. east of Whytewold Rd. Rent \$92.50. Contact F/L Smith, Local 390, VErnnon 7-2010.

7-rm. house near school in Headingly, \$65.00. Phone 55-676.

Small 4-room bungalow, West End. Rent \$100. Fenced yard, garage, oil heat. Possession Sept. 1. SPruce 4-1361.

TO SUBLET

Furnished apt., 1794 Portage for 4 - 6 weeks commencing 18 Aug. Contact F/O R. L. Barry, TU 8-5334, or Local 679.

WANTED TO RENT

F/O and Mrs. G. V. Clements, two children, desire to sublet a PMQ rented unit or furnished 2-bedroom apt. for the period 15 Aug. - 15 Oct. Phone HU 9-4989.

Couple with no children desire to rent either furnished suite or house for a period of 6 months to begin anytime from August 21st on. Please call VE 2-0918 after 6:00 p.m. F/L W. R. Graham.

BICYCLES FOR LOAN

Ladies' and Men's Bicycles are now available on a 24-hour loan basis from the Station Recreation Centre. Personnel wishing to make use of this equipment are to sign out same from the Sports Stores between 0800 and 1615 hrs. daily.

FOR SALE

Lloyd 7-Way Stairclimber Carriage. Completely equipped, rainhood, mosquito net, grocery carrier, mattress, chrome fenders. New condition. \$40.00 or nearest offer. 81 Bourkwood Place, VErnnon 2-6379.

FLETCHER CRES., FORT GARRY—\$16,500.

Spacious 5-rm. bungalow, 7 yrs. old, attractive plan with patio opening off dining area to very special back garden. Brick planter, built-in buffet, 4-pce. vanity bath with wall heater. \$3,500 dn. will buy this beautiful home. Phone Avis Patterson, VErnnon 2-1221, evenings, or VErnnon 2-6666.

FOR SALE

Two modern table lamps, also ladies' new (blue peau de soie) dress, size 11-12. Phone VErnnon 2-2930.

Boys' Super Cycle, 24-in. wheels, 20-in. frame, very good condition, \$15.00. Phone VErnnon 2-5143.

FOR SALE OR LEASE

5-rm. bungalow, 3 bedrooms, 8 blocks from main gate, garage, trees and garden. Full price \$8,550.00 with \$850.00 down; payments \$81.50 per month. Will take car as down payment. VE 2-4462 evenings.

SKIN DIVING CLUB

Will hold its monthly meeting on Monday, August 14th at 2030 hrs. in the Recreation Centre Lounge.

Specialized brickwork custom jobs. Repairs, estimates, etc., Phone VE 2-3824.

SUGGESTION AWARD

(Continued from page 1)

cal officer working on the repair and overhaul of gyros, devised a filtration method for reclaiming material which was normally discarded when it became contaminated with metallic particles and other substances. By using reclaimed material which met required specifications an estimated saving of \$5,000 was effected. The suggestor received \$300.

By designing a bench decontamination box for use in inspecting small pieces of equipment containing radio-active materials, two army servicemen removed a health hazard and saved the department about \$19,000 in the first year of using it. The suggestion, which saved the expense of sending jobs out to contract or building a special room for the work, netted a combined award of \$590.

There have also been some worth-while suggestions in administrative matters. One, which concerned an amendment to filing jackets utilized in the department, resulted in a first year saving of \$2,300 and an award of \$175 for the suggestor, who is a member of the civilian administration staff.

Awards, which are based on a carefully worked out scale of benefits, are given in money or merchandise. There is another form of reward, however, which is not scaled to the importance of the idea submitted—it is the immense feeling of satisfaction the individual has in knowing that he is contributing to a better service.

RCAF AIRCRAFT

(Continued from page 5)

have flown a distance equal to 120 return trips to the moon.

CC109

The CC109 is a medium range turbo-prop transport, manufactured by Canadair Ltd., of Montreal.

It is convertible from a passenger to a freight aircraft in under four hours.

In just 15 minutes the CC109 can climb to 20,000 feet.

It can haul 40 or 60 passengers depending on the seating arrangement, or a 15,000-lb. cargo.

The CC109 is powered by two 3,500 horsepower Napier-Eland turbo-prop engines, giving it a speed of about 325 miles per hour.

It has a range of 1,700 miles or can make six stops on a 1,100-mile flight without refuelling.

C130-B HERCULES

The Hercules is a twin-engine prop-jet cargo aircraft, capable of carrying a fifteen-ton cargo 4,000 miles at 340 mph.

It has sufficient range to fly non-stop from Trenton, Ont., to the RCAF Air Division in Europe.

The aft doors of the C130-B open in seconds to give access to its 9 ft. by 10 ft. by 41 ft. cargo space.

The upper half of the rear doors open into the aircraft and the lower half folds down to form a loading ramp.

The C130-B Hercules can accept a CF104 with wings and tail section removed.

The engines develop over 16,000 horsepower.

It has a 132.6-foot wingspan and is 97 ft., 7 inches long.

The C130-B is capable of landing and taking off on short runways, rough ground, and with skis on snow surfaces.

SA16-B ALBATROSS

The SA16-B Albatross is entering service with the RCAF as a replacement for the Canso aircraft.

It was developed as a general utility aircraft capable of performing duty as a hospital plane, air-sea rescue amphibian, cargo and amphibious transport or as a photo-reconnaissance aircraft.

The Gruman Albatross is credited with the saving of over 900 lives during the Korean Conflict.

The Albatross has been adopted by 13 governments besides the U.S. Air Force, Coast Guard and Air Rescue Service.

The Albatross has landed and taken off in rough seas with up to seven-foot swells.

The Gruman SA16-B with 96½-foot wingspan, has an endurance of more than 20 hours, and may be refuelled from ships at sea.

It is capable of carrying 10 passengers, or 12 litter cases.

The Albatross is equipped with the most modern electronic search and rescue and navigational equipment available.

US MILITARY A/C

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This culminated five years of design and development, under the leadership of the company's director of engineering Prof. Dr. Kurt Tank, renowned chief designer of Focke-Wulf during World War II.

It was in 1955 that the Indian Air Force decided to finance an indigenous jet fighter specially tailored to their own requirements, while

Folland Gnat Mk 1s were purchased and put into production by Hindustan as an interim machine. The Gnat's Bristol Siddeley Orpheus 701 engine was also put into production at Hindustan's specially built jet-engine factory. Even with help from Folland and Bristol Siddeley, in the form of drawings and parts, and by purchasing a wide range of British proprietary equipment, the Gnat programme was a difficult task for a nation previously completely unskilled in the manufacture of high-speed aircraft.

While the Gnat programme took shape so did the HF-24. It was from the outset a single-seat, twin-Orpheus 701 machine, with a swept, dog-tooth wing of some 5 per cent t/c ratio, high-light flaps, an area-ruled fuselage and a low-mounted slab tail. Four guns (30mm Adens?) form internal armament, and it is likely that a radar fire-control such as Ferranti Airpass 2 will eventually be integrated. The HF-24 has always been intended to serve strike and reconnaissance roles, in addition to its prime fighter function.

Slow-speed features were explored at the Indian Institute of Science at Bangalore; and it may well be that time has been rented in at least one high-speed tunnel inside India. The first prototype, about half of which is entirely Indian in origin, was rolled out earlier this year, but suffered damage during taxiing trials. Finally Wg. Cdr. Das was given a fully serviceable aircraft, and on June 24 he departed over Bangalore for 20 min. watched by Defense Minister Mr. V. K. Krishna Menon, who had journey there to witness the flight. Mr. Menon saw the HF-24 rolled twice, and one report claims that M1 was exceeded. In the factory an embryonic production line is already taking shape, and later versions of the aircraft will have increased power — possibly Orpheus 801s or even BOr 12SRs. All details of the aircraft are restricted, beyond the fact that its length is about 50 ft. and that the seat is an automatic Martin-Baker design.

JAPANESE FIRST STARFIGHTER MAKES FIRST FLIGHT

(Starfighter Newsletter — Jul 61)

Maiden flight for the first Japanese Super Starfighter came at 8 a.m. June 30th, at Palmdale, Calif. C. A. "Kit" Kitchens, Lockheed engineering test pilot, flew the plane for 45 minutes and signed it off trouble-free for an afternoon flight. The flight was four days ahead of schedule.

At the conclusion of the test hop Kitchens made a low-level 600-mph pass across the Lockheed hangar for the benefit of some 25 Japanese Air Self Defense Force who witnessed the first flight.

The plane is the first of three complete single-seat F-104Js being produced for Japan at Lockheed's California Division factories in Palmdale and Burbank. These are the forerunners of 180 F-104Js that will go into service with the JASDF.

The remaining 177 F-104Js will be manufactured in Japan by Mitsubishi Heavy Industries under license from Lockheed Aircraft International. Kawasaki Aircraft Company will be prime subcontractor.

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