LOCKHEED MARTIN

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Service News

A SERVICE PUBLICATION OF LOCKHEED MARTIN AERONAUTICAL SYSTEMS SUPPORT COMPANY

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Editor

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Focal Point

C-130J: The Safest Hercules Ever Built

The venerable C-130 Hercules is one of the safest tactical transport airplanes in aviation history. Operated worldwide by sixty-five different countries for more than forty-five years, the superb safety record of the Hercules airplanes is remarkable. Although the C-130 is a proven safe aircraft, Lockheed Martin engineers expended considerable effort to "design in" numerous safety enhancements to the new C-130J such as the Automatic Thrust Control System (ATCS). Described later in this issue, ATCS is a system unique to the "J". In the event of a failure of an outboard engine, ATCS provides autofeather of the associated propeller and automatic control of the resultant asymmetric thrust. As unique and important as it is, ATCS is but one of a variety of additional safety features designed into the C-130J.

R. A. "Bob" Price

Taking advantage of the opportunity provided by modern technology, ingenious engineers at Lockheed Martin used their considerable talents to provide C-130J pilots with new systems that improved safety by increasing pilot situational awareness. This was accomplished by incorporating Head Up Displays (HUD's) as primary flight references; an Advisory, Caution and Warning System (ACAWS); a Digital Map Unit (DMU); a Navigation Display; and a Coordinated Aircraft Positioning System (CAPS). A Ground Collision Avoidance System (GCAS) embedded in the dual mission computers and an Enhanced Traffic Collision Avoidance System (ETCAS) were also provided for added safety for Hercules aircrews. Additionally, a Low Power Color Radar (LPCR) was incorporated, featuring an innovative windshear prediction capability.

...continued on Page 11

Front Cover: LAC Chris Hillock photographed this C-130H of 40 Squadron, Royal New Zealand Air Force, overhead Lake Wakatipu, Central Otago, New Zealand.
Back Cover: The World Tour C-130J taxis past the flag display at FIDAE 98 in Chile.

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Automatic Thrust Control System

by **Lyle Schaefer**
Chief Experimental Test Pilot
and **Wayne Roberts**
Chief Test Pilot, C-130J
Lockheed Martin Aeronautical Systems

The C-130J has many new features that will make a positive impact on flight safety. Among these features are dual Head Up Displays (HUD's), an angle of attack based stall warning system, aural and visual alerts for excessive sideslip, a ground proximity warning system, a predictive windshear alerting system, and takeoff configuration alerts. In addition to all of these, the C-130J utilizes a unique system which has the potential of making a major contribution to flight safety: an Automatic Thrust Control System (ATCS).

Why ATCS on the C-130J?

The C-130/Hercules has been in continuous production since 1954. Prior to the C-130J, there was only one major upgrade to the T-56 powerplant to increase thrust. The original C-130 powerplant (Series I) was rated at 3,460 Shaft Horsepower (SHP) and included an engine/propeller combination that produced, on a standard day, sea level thrust of approximately 8,600 pounds (lbs.) at 80 knots. The Series II powerplant used on the C-130B and C-130E aircraft introduced a small increase in SHP to 3,755 SHP. The upgraded T-56-15 engine (Series III) was rated at 4,591 SHP, which represented a significant increase in power and produced 9,050 lbs. of thrust under the same conditions. The all new C-130J propulsion system, on the other hand, is rated at 4,637 SHP, but produces 10,200 lbs. of thrust under these conditions. The C-130J powerplant is able to introduce such a dramatic increase in thrust because of the tremendous gain in efficiency from the new Dowty six-bladed propeller. The new propeller allows the powerplant to convert a much greater percentage of shaft horsepower into useable thrust. Thrust is important to directional control because it is the force that must be countered by the rudder during an engine out condition.

In contrast to the thrust growth, there have been no changes in the size or motive power of the lateral/directional flight control system. The design specification requirements and testing techniques, however, have changed dramatically over the years. Many of the design specification and testing technique changes have had a direct impact on the method by which V_{mc} (Minimum Controllable Airspeed with the critical engine inoperative) is calculated. Through the years, the maximum rudder pedal force used during V_{mc} test-

What is ATCS?

- Limits Asymmetric Thrust at Slow Speeds to Drastically Reduce Minimum Control Speeds.
- Restores Thrust with Airspeed to Optimize Handling Qualities and Performance.
- Mission Computer Based Software Control.
- Operation Reflected on Engine Display.

ing has decreased from 180 lbs. for the original C-130 to 150. lbs for the C-130J. The maximum allowable rudder pedal force is one of the most significant factors in the determination of V_{mc}. Other testing procedures and design specifications have changed as well. For example, nose wheel steering can no longer be used during the testing for V_{mc}. As a result, virtually all of the techniques employed during testing of the C-130J, in accordance with the United States Federal Aviation Administration and military design specifications, assume "worst case scenarios" and therefore yield very conservative results.

The net impact of the tremendous increase in thrust combined with the reduced maximum allowable rudder pedal force and other, more conservative testing procedures was significantly higher V_{mc} speeds during initial C-130J testing. The higher V_{mc} speeds translated into longer required runway lengths. Since one of the primary missions of the C-130/Hercules aircraft is operation from short, unimproved fields, the longer runway requirements would have nullified the advantages of the increased thrust.

How ATCS Works

- Mission Computers Monitors Outboard Engine Torque and Propeller Speed.

- Limits Outboard Engine Thrust Based on Asymmetric Power, Airspeed, Altitude, and Temperature.

- Automatically Restores Power with Increasing Airspeed.

- Power Restoration Schedule Maintains Constant Rudder Force.

The Automatic Thrust Control System was designed to restore the short field performance of the Hercules by lowering V_{mc} which in turn lowers critical field length. On the C-130J, the ATCS reduces V_{mc} by almost fifty (50) knots on the standard airplane and by over thirty (30) knots on the stretch airplane. On a standard day at sea level, the critical field length for a C-130J at 155,000 lbs. gross weight is reduced by approximately 2,800 feet on the standard airplane and by approximately 1,000 feet on the stretch airplane. The improvements in critical field length are even more dramatic at lighter weights.

How ATCS Works

The algorithms used by the ATCS are stored in the Mission Computers. The Mission Computers, in turn, work with the Full Authority Digital Engine Controls (FADEC). Through the FADEC, the Mission Computers monitor both torque and propeller speed (N_p) on the outboard engines to detect a thrust loss. Torque is used because it is a very good indication of thrust at high power conditions and N_p is used to detect thrust losses caused by some rare propeller malfunctions.

When the Mission Computers detect a thrust loss on an outboard engine, the thrust of the opposite (operating) outboard engine is reduced based on such variables as airspeed, altitude, and temperature. The system then restores power on the operating outboard engine as the airspeed increases. The torque limit schedule that is used by the system is designed to optimize performance while providing acceptable handling qualities. The schedule allows the flight crew to maintain a constant heading while using a constant force on the rudder pedals, even as the airspeed increases.

Figure 1 shows the results of an actual test run of the ATCS on the runway and helps to make the system easier to understand. Approximately fourteen seconds into the run, fuel flow was stopped to the number one engine. The Mission Computers sensed the reduction of thrust from the number one engine and immediately reduced the thrust on the number four engine to compensate. The actual time required for the thrust reduction on the number four engine was approximately four tenths (0.4) of a second, so the two events occurred virtually simultaneously. The quick reduction of thrust on the operating engine is critical to maintaining directional control of the airplane. The force on the right rudder pedal increased uniformly at the engine failure and then maintained a constant level throughout the takeoff. As the airspeed continued to climb, the system restored the thrust on the number four engine.

ATCS Provides Full Power When Needed

A major concern when considering the implementation of ATCS is if the airplane can afford the additional power reduction required to reduce V_{mc} speeds following a total engine failure. Specifically, are two and one-half engines adequate to continue a takeoff and meet climb performance requirements? A basic rela-

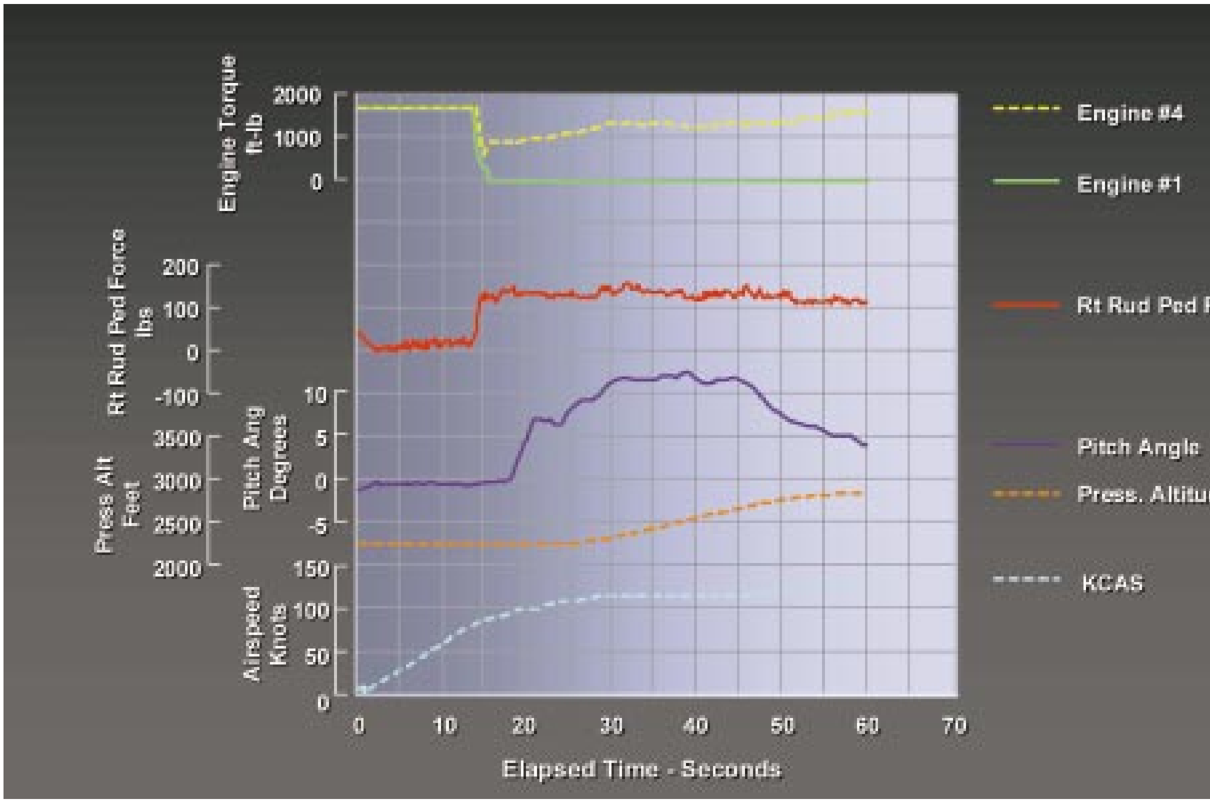


Figure 1

tionship exists in the implementation of ATCS that significantly minimizes the exposure to adverse, low power conditions. The Hercules is normally not climb limited during an engine-out condition when it is at low gross weight and can generate high thrust (low altitude, cold day). However, it is under these conditions that ATCS must minimize the thrust on the operating outboard engine after a failure. Climb performance decreases as aircraft gross weight increases and temperature and altitude increase. As these conditions increase (become more adverse), available engine thrust decreases, and ATCS does not need to reduce good engine thrust as much to control V_{mc}. For example, a critical engine failure on a C-130J-30 (stretch) at an elevation of 2,500 feet above sea level and a temperature of 80 degrees Fahrenheit at or above V_1 will result in no thrust reduction on the operating outboard engine. This is because the rudder on the Hercules is adequate to handle 100% of the thrust available on the remaining three engines in this situation.

Normal Operation of ATCS

As shown in Figure 2, the red-guarded flight station ATCS switch on the overhead panel is "ON" for all normal operations (guard down). When a differential thrust situation develops between the outboard engines, the ATCS system functions automatically. No aural or visual alerts on the primary flight displays are provided during ATCS operation. The system functions completely transparent to the crew except for the unique graphics provided on the engine display, as shown in Figure 3.

Engine failure is annunciated to the flight crew through a red "FAIL" message shown directly below the engine shaft horsepower display and a white box around the engine instruments. Indications on the opposite outboard engine's shaft horsepower display annunciate the activation of the ATCS. A blue "ATCS" message is shown directly below the gauge. A blue wedge shape will also appear on the gauge. The size of

ATCS Design Requirements

- As Reliable as Primary Flight Control System (Dual Redundant).

- Completely Automatic Full-Time System Operating Transparently to the Flight Crew.

- Improved Take-Off Performance with Minimal Impact on Climb Performance.

- Function for Actual and Simulated Engine Failures (#1 and #4 Only).

- Continuous Monitoring of ATCS Status.

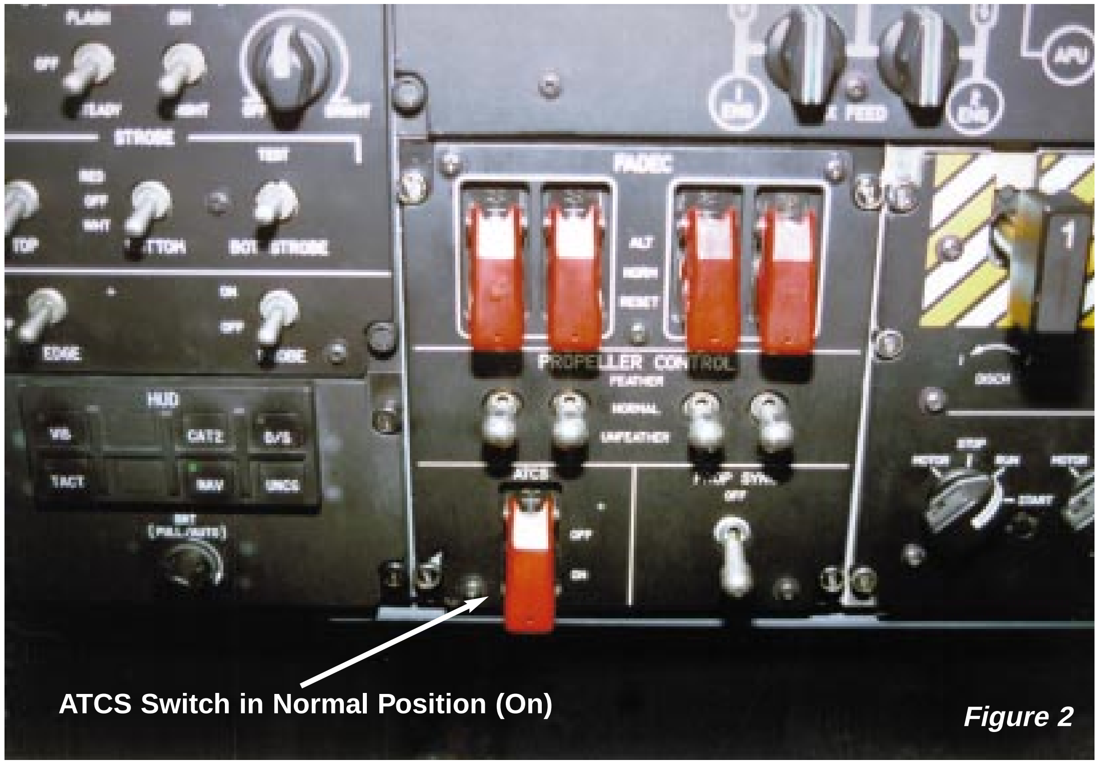


Figure 2

the wedge indicates the difference between the power lever commanded torque and the ATCS imposed limit. The blue wedge will shrink as the ATCS limited torque increases with airspeed, or if the power lever angle is reduced.

The ATCS schedules provide the reduced torque limit on an outboard engine, regardless of the cause of the torque differential between outboard engines. For example, if one power lever is retarded to flight idle, the ATCS will sense the differential torque and limit the opposite torque appropriately. The system will also function if the pilot allows the airspeed to decay excessively during an actual or simulated three engine approach and then rapidly advances the power levers to takeoff position. After an outboard engine failure, the system never allows the pilot to apply more power on the opposite outboard engine than can be comfortably controlled with 150 lbs. or less of rudder force and available aileron deflection.

Figure 3

ATCS Override

There are two methods of disarming the system available to the flight crew. First, the flight crew can disarm the ATCS through the single guarded switch on the overhead panel. Turning the control switch “OFF” disables all the ATCS functions. If the ATCS is actively limiting torque when the switch is turned off (as in an actual or simulated outboard engine failure), the torque will be restored at a rate of 500 foot-pounds per second. This rate of advancement approximates the rate of power increase from a pilot controlled rapid power lever movement.

Second, the flight crew may override the ATCS torque limit condition through either of two identical switches, one each mounted on the outboard surface of the number one and four power levers. (Some readers may realize that these are the same switches used to disconnect the autothrottles. The dual purpose switches are considered acceptable since disconnection of either ATCS or autothrottles returns power control to the pilot.) Either of the power lever switches will override the ATCS under the following conditions:

1. Weight is off the wheels.

2. Either button is pushed three (3) times within two (2) seconds.

Figure 4

3. The button pushes must be completed while the ATCS is functioning to limit power on one of the outboard engines (this is determined by the blue ATCS message below one of the outboard SHP gauges).

When the ATCS is overridden through the power lever mounted switches, unique SHP display indications are provided to the crew, as shown in Figure 4. When the pilot pushes the override button the third time within two seconds, the following occurs:

1. The ATCS will be turned off.

2. The power will be increased up to the power lever commanded setting at 500 foot-pounds per second.

3. The blue “ATCS” message and the blue wedge will be removed from the SHP display and an amber “OVERRIDE” message will be displayed below both the number one and number four SHP gauges.

After the crew overrides the ATCS operation by pushing the switches on the power levers, the overhead ATCS switch must be turned “OFF” to clear the “OVERRIDE” message from the display. The system may then be reactivated by turning the overhead ATCS switch back “ON”.

Crew Interface - Abnormal Conditions

- Override Capability on the Power Levers for Restoring Power.

- Guarded Switch for Disabling System.

- Crew Alerts for Disarmed or Degraded Conditions.

- Rudder Available Above 150 Pounds if Required.

ATCS Flight Safety Summary

The C-130J Automatic Thrust Control System essentially eliminates V_{mc} as a safety consideration during an actual or simulated engine out condition on takeoff, wave off, or up and away operations. The system is designed so that ATCS provides full power when it is needed most, yet maintains the requirement for a maximum of 150 lbs. force on the rudder pedal during an actual or simulated outboard engine failure. The system allows the C-130J to take advantage of increased thrust which in turn reduces runway requirements and increases the usefulness of the aircraft. The Automatic Thrust Control System is another example of cutting edge C-130J technology paving the way for safety and performance improvements. ❑

Hercules Operators Conference

ACTION ITEMS

In the last issue of *Service News*, it was reported that all remaining Action Items from the 1997 Hercules Operators Conference (HOC) would be addressed in this issue. The following pages contain the responses to Action Item Numbers 1, 5, 6, and 8 through 10. We are pleased to provide these answers to your questions and look forward to the 1998 HOC when we can once again work together with you to solve problems.

ACTION ITEM NUMBER 1:
Flight Manual Safety Supplement Distribution

Some operators requested that Lockheed Martin confirm the distribution of flight manual safety supplements and advise the operators of the distribution list. Lockheed Martin distributes flight manual safety supplements to all Hercules operators on record with Lockheed Martin. Naturally, the actual distribution list is much too lengthy to print in this publication. However, any Hercules operators who believe they may not be on the distribution list for the flight manual safety supplements may contact Jamal Brown, Revision Service Coordinator, at the address at the bottom of this page for corrections and/or additions.

ACTION ITEM NUMBER 5:
Service News Publication

Operators in attendance at the 1997 Hercules Operators Conference requested that Lockheed Martin publish the *Service News* every quarter. This magazine will continue to be published every quarter and distributed to all interested Hercules operators, technicians, Service Centers, etc. Lockheed Martin is also in the process of developing a system for electronic distribution of the magazine as well as placing the library of back issues on Compact Discs. Please forward all address corrections and additions to the *Service News* editor at the address listed on the inside front cover of this issue. As always, your comments, suggestions, article ideas, and photographs are always welcome.

ACTION ITEM NUMBER 9:
L-100 Valve Housing

L-100 operators at the 1997 HOC requested that Lockheed Martin investigate the possibility of certifying the C-130 propeller valve housing on the L-100 aircraft. This request came in response to United States Federal Aviation Administration Airworthiness Directive 97-05-07. Installation of a C-130 valve housing with a servo-type governor would not meet the intent of the Airworthiness Directive. Therefore, the only option available is to incorporate the the modification in accordance with the Airworthiness Directive and utilize valve housings with standard-type governors on the outboard engines.

ACTION ITEM NUMBER 10:
Electronic Manuals

Many operators have expressed an interest in electronic versions of C-130/Hercules Technical Manuals. All of the C-130J Technical Manuals are in electronic format on Compact Disc. The Technical Publications Department is working with interested operators on an individual basis to convert existing paper manuals to electronic version manuals. For more information on this subject, please contact Jamal Brown, Revision Service Coordinator, at the address listed below.

For more information concerning Action Item Numbers 1 and 10, please contact:

Lockheed Martin Aeronautical Systems Company
Attention: Jamal Brown
Dept. 63-23, Zone 0538
86 South Cobb Drive
Marietta, GA 30063
U. S. A.

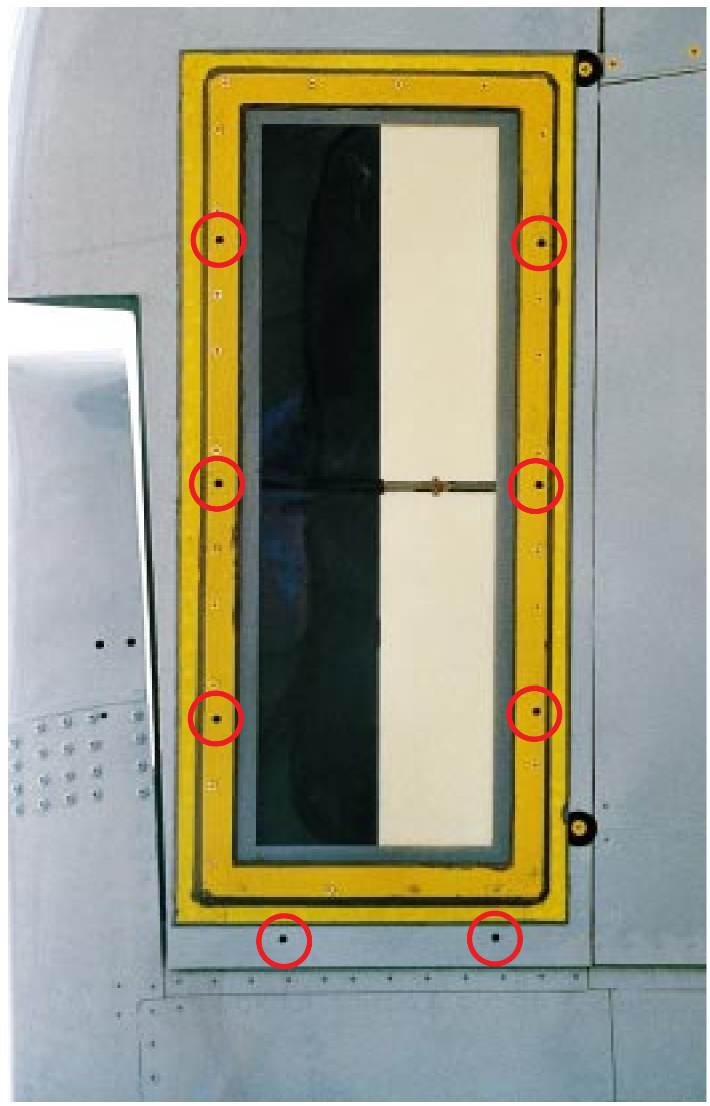
Facsimile: 770-494-6925

ACTION ITEM NUMBER 6:
Horizontal Stabilizer Tip Assembly Drainage Provisions

One operator at last year's Hercules Operators Conference presented a briefing that detailed problems with water accumulation in the horizontal stabilizer tips. The C-130/Hercules aircraft horizontal stabilizer tip assembly was manufactured without water drainage provisions. In some cases, water can accumulate in the tips, resulting in corrosion possibilities. Additionally, aircraft equipped with the Electroluminescent Lights (EL) may experience electrical shorts if water accumulates in the vicinity of the wiring. Lockheed Martin has developed a procedure by which operators may add drain holes to their aircraft. This procedure is the subject of an upcoming Service Bulletin due out by the end of 1998. The Service Bulletin number is 82-728/382-55-10.

The procedure in the Service Bulletin involves adding a total of eight (8) drainage holes to the lower surface of the horizontal stabilizer tip skin (shown in photo below) and additional holes in the ribs and formers inside the tip (not shown in photo below). This will allow any water that does accumulate inside the tip to flow to a low point and then exit the aircraft. Operators with aircraft not equipped with the Electroluminescent Lights will be required to drill the holes in the lower skin of the horizontal stabilizer tips. Operators with aircraft equipped with the Electroluminescent Lights will remove six fasteners in the light and then drill two additional holes in the skin. The photographs below illustrate the affected areas of the horizontal stabilizer tip. ❑

Detail Area Shown in Photo to Right



○ = Location of Drain Hole per Service Bulletin

ACTION ITEM NUMBER 8:
Global Air Traffic Management

by W. H. "Bill" MacInnis
Engineering Program Manager
Airlift Derivatives

Air traffic around the world continues to grow at a tremendous pace. This growth places a strain on the air traffic management systems that are now in place. Due to this inevitable growth and subsequent system strain, the International Civil Aviation Organization (ICAO), United States Federal Aviation Administration (FAA), and other civil aviation authorities plan to implement changes in the air traffic system. The eventual goal of the changes is an idea known as "free flight". Free flight will allow operators to select their own altitude, routing, etc. and will allow substantial time and fuel savings. Global Air Traffic Management (GATM) is the name most commonly given to the changes in the air traffic system that will allow free flight. Due to the global nature of the Hercules aircraft, many operators at the 1997 HOC requested details on the GATM plan. This article outlines the proposed time frames for some of the more significant events.

Since the European region is home to some of the most significant air traffic concentrations, most of the changes will take effect there before the rest of the world feels the effect. Operationally speaking, aircraft that are not equipped with the necessary avionics will face handling delays and non-preferential routing in the future.

GATM Implementation Time Frame

1998 **RNP-5 (BRNAV) Implemented in the European Region**
RNP-10 Implemented in many Pacific Routes

1999 **8.33 kHz Channel Spacing for VHF Communications in European Region**

2000 **TCAS Implemented in European Region**
RVSM Implementation Continues:
- **North Atlantic**
- **Pacific**
- **Europe**

The changes slated for this year include Required Navigation Performance (RNP) 5 (also known as Basic Area Navigation - BRNAV) for the European region and RNP-10 for many Pacific routes including the Northern Pacific routes and the Hawaiian routes. RNP-5 requires that the aircraft be within five (5) nautical miles (NM) of its cleared position (centerline) 95% of the time. RNP-5 also requires Flight Management System functionality. Depending on equipment currently installed, this requirement may be achieved by integrating navigation sensors into the the Flight Management System. Aircraft not in compliance with RNP-5 and operating in the European region should expect non-optimum handling and possible delays.

RNP-10 requires that the aircraft be within ten (10) NM of its cleared position 95% of the time. This requirement may be met by several methods including recertification of the actual performance of navigation systems currently installed (Inertial Navigation Systems, etc.) or by some Global Positioning System (GPS) units. Aircraft not in compliance with RNP-10 can expect to be excluded from the affected airspace in the Pacific.

The European region is also implementing an FM radio frequency immunity requirement for both VHF communication and navigation equipment. This requirement is due to high power FM radio broadcast stations. The original implementation date established by ICAO Annex 10 was the beginning of 1998, but various countries have published extensions, including a phased requirement between 1998 and 2001. On the other hand, some countries have already published restrictions at particular airports. Still others issued firm requirements in early 1998. Avionics manufacturers are currently producing direct replacement units for existing systems that comply with the new requirements. Non-compliant aircraft can expect handling delays and may be restricted from making particular Instrument Landing System (ILS) approaches in instrument flight rules (IFR) conditions.

In 1999, the major change will be the implementation of 8.33 kHz channel spacing for VHF communications systems. The 8.33 kHz spacing will be compatible with the existing 25 kHz spacing now in effect and will include airspace above Flight Level (FL) 195 in France and above FL 245 throughout most of the balance of the European region. Many avionics manufacturers will produce direct replacements and upgrades to existing radios to bring them into compliance. Non-compliant aircraft

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can expect exclusion from the affected airspace unless UHF equipped. However, aircraft utilizing UHF radios can expect handling and dispatch delays. As noted earlier, all VHF communication and navigation radios will eventually be required to comply with the FM immunity requirement.

Traffic alert and Collision Avoidance System (TCAS) and Reduced Vertical Separation Minimums (RVSM) implementation will be the major changes in the year 2000. The TCAS requirement will affect all large aircraft operating in Europe and will entail a TCAS system, a Mode S transponder, and either a stand alone display or incorporation into an Electronic Flight Information System (EFIS). TCAS will monitor other aircraft in the area by interrogation of their transponders and will provide conflict resolution recommendations if a collision threat is identified. Compliance with this requirement will involve installation of a TCAS system, many of which are available commercially. The consequences of non-compliance with this requirement have yet to be determined.

RVSM will expand to include all Pacific routes, the European region, and FL 290-410 in the North Atlantic routes in 2000. This will require two independent altitude measuring systems on the aircraft. Many aircraft will be able to comply with this requirement with a new air data computer and new plumbing. Aircraft not in compliance with RVSM will face exclusion from the affected airspace which will result in less than optimum flight profiles.

As stated earlier, all of these changes are part of an overall effort to achieve free flight by 2010. Hercules operators will be faced with equipping their aircraft in accordance with the requirements or losing access to preferred routing and expedient handling in much of the world. Due to the vast number of avionics configurations aboard the Hercules fleet, the exact modifications required will vary from operator to operator. Lockheed Martin has retrofit kits available to bring older Hercules aircraft into compliance with the new requirements. Questions concerning technical matters, including configuration issues, should be directed to Bill MacInnis at the location listed below. Questions concerning price and availability of kits to bring Hercules aircraft into compliance with the GATM requirements should be directed to Raymond Yearty at the location listed below. ❑

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GATM Price/Availability Point of Contact:

Lockheed Martin Aeronautical Systems
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E-mail: raymond.e.yearty@lmco.com

...Continued from* "Focal Point", *page 2

Two warning systems were added to the "J" after developmental testing began. These are the stall and sideslip warning systems. The angle of attack based stall warning system provides aural and visual cues to the pilots, alerting them when airspeed approaches stall speed. Coupled with the stick pusher, the stall warning system should prevent aircrews from ever stalling the airplane inadvertently. The sideslip warning system also provides aural and visual cues to the crew when the sideslip angle approaches airplane design limits. These warning systems were incorporated in the baseline C-130J aircraft to provide additional safety protection during both normal and emergency (engine out) operation in all climactic conditions including icing.

The new systems designed into the C-130J are obvious safety enhancements. I have had the good fortune of flying the "J" during much of the testing of these systems, and I have personally witnessed and assessed the added protection that is provided for the aircrews. I truly believe that the magnificent C-130J is the most advanced tactical transport in the world today, and it is undoubtedly the safest Hercules ever built!

Bob Price
R. A. "Bob" Price
Director of Flying Operations
Acting Vice President, C-130J Testing

Paratroop Door Square Windows - Bulging in the Outer Pane

One of the operators of Hercules aircraft reported damage to a square paratroop door window in the form of a bulge deformity on the external window pane, Part Number 382776-5. Lockheed Martin engineering investigated the deformity and determined it occurred due to excessive heating of the window pane. When the door is open and locked in the overhead position, it is in very close proximity to a cargo compartment heating system air outlet. The air exiting the outlet when the cargo compartment heating system is operating can reach 350 degrees Fahrenheit. The window pane is designed to withstand temperatures up to 200 degrees Fahrenheit. The heat induced damage may occur anytime the cargo heating system is operating and the paratroop door is open and locked in the overhead position for extended periods of time either in-flight or on the ground.

Old style cargo compartment heating duct - air is directed straight down onto window when door is open and locked in overhead position.

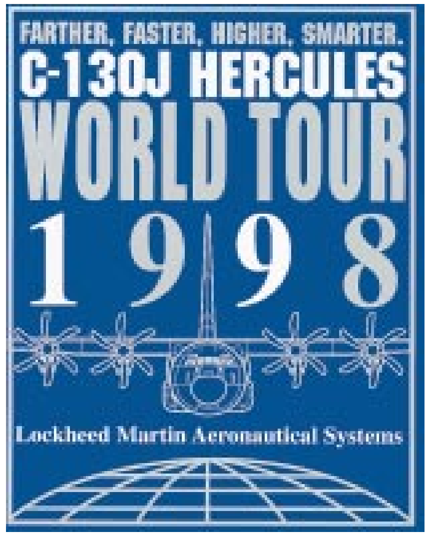
Lockheed Martin has issued Alert Service Bulletin A82-726 to address the subject. The Alert Service Bulletin recommends inspection of the (square) paratroop door outer window panes (P/N 382776-5) and replacement of the air outlet panel (P/N 342398) to avoid future damage. The replacement air outlet panel (P/N 3305072) includes a diffuser so that the air is no longer directed at the window when the door is open and locked in the overhead position.

New style cargo compartment heating duct - diffuser directs air to the sides away from the window.

If, during the inspection recommended by the Alert Service Bulletin, the window pane is found to show evidence of bulges, immediate replacement is recommended. If bulges are present, but immediate replacement is not possible, it is recommended that no further pressurized flight operations be conducted until the window is replaced.

Operators should refer to Lockheed Martin Alert Service Bulletin A82-726 for details on the subject and for official instructions. ❑

The World Tour continued to impress pilots and operators alike with the capabilities of the C-130J on the second and third legs, which included visits to Central and South America, the Pacific Rim, and the C-130J's first appearance at an airshow: FIDAE 1998 in Santiago, Chile. On the first leg of the tour, the C-130J visited ten countries in southern Europe and the Middle East. The third leg ended with a flight from Honolulu to Marietta during which the C-130J covered 3,935 nautical miles in 10 hours, 52 minutes, making it the longest unrefueled, non-stop flight by a C-130 carrying its fuel internally. Two other legs are planned for the tour: one to Canada and one to northern Europe.



Through the third leg of the tour, the C-130J has logged 98 demonstration flights allowing 255 guest pilots and 1,837 passengers to experience the new airplane first hand. According to Rick Hundley, vice president of International Sales, "The reaction from the pilots in Central and South America was just like the reaction we got in the Middle East. They can't believe this is a C-130. The power, the ease of operation, and the real savings in manpower and maintenance leave our guests awed." The photos below are from various stops along the tour. ❑

Announcing the...

1998 Hercules Operators Conference

Lockheed Martin Aeronautical Systems Support Company is pleased to announce the Tenth Hercules Operators Conference (HOC). The conference will be held during the week of October 12 through 16, 1998, at the Atlanta Marriott Northwest Hotel, located near our facilities in Marietta, Georgia.

We will mail a copy of the preliminary agenda to each person who indicates an intention to attend. We trust this will assist operators and other organizations to make their plans well in advance of the conference opening date.

We would like to have a useful and informative conference this year. In order for that to happen, we need input from each conference attendee. The agenda is dependent upon the topics provided by you, the attendee, and is based on the ideas, inquiries, and experiences each of you encounter daily in your operation. Such items as recurrent problems and solutions to those problems as well as the methods utilized to track down and resolve the problems are the heart of the conference agenda. Also, we realize some of you have developed time-saving and/or cost saving ideas that make your operation better. These items would be greatly appreciated by the group. Your inputs make a big difference and are what the conference can use to great advantage.

We solicit your input for the working groups. We realize that, for the working groups to be effective, there must be dialogue from each participant. Your topics and your input are welcome and necessary so the working groups will be productive. Our desire is for the conference to be informative and useful in all aspects for each participant.

If you have not received a HOC formal invitation and would like to attend, we welcome your participation. Please detach or photocopy the attached form and notify the Hercules Support Center at the location listed below.

In summary, please advise us of your selected topic for presentation. Let us know how much time is required (most presentations are from 5 to 20 minutes). Also, please let us know any audio-visual needs, etc. Again, we rely on you, the participant. This is your conference and the overall success will depend on your contribution and participation. Let us all work together to make this the best conference ever. We look forward to hearing from each of you soon. ❑

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1998 HERCULES OPERATORS CONFERENCE
Preregistration Form

Telephone: 770-431-6569/6565 Facsimile: 770-431-6556

OPERATOR IDENTITY: (Location) Telephone:

Name/Title/Organization:

Address: Facsimile:

GENERAL DESCRIPTION OF YOUR ORGANIZATION:

HOC REPRESENTATIVE:

ATTENDEES:

PRESENTERS:

TOPICS:

ITEMS OF INTEREST FOR CONFERENCE:

AIRCRAFT FLIGHT HOURS - BY LAC SERIAL NUMBERS:

CONFERENCE FEE: (Nonrefundable, per person, payable in US dollars at registration)
International Operators - $100
U. S. Government (Military and Civilian) - $100
Vendors, Contractors, and Service Centers - $300

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