

APPENDIX 1

DC10-30 N83NA AT LONDON, HEATHROW, 16 SEPTEMBER 1980

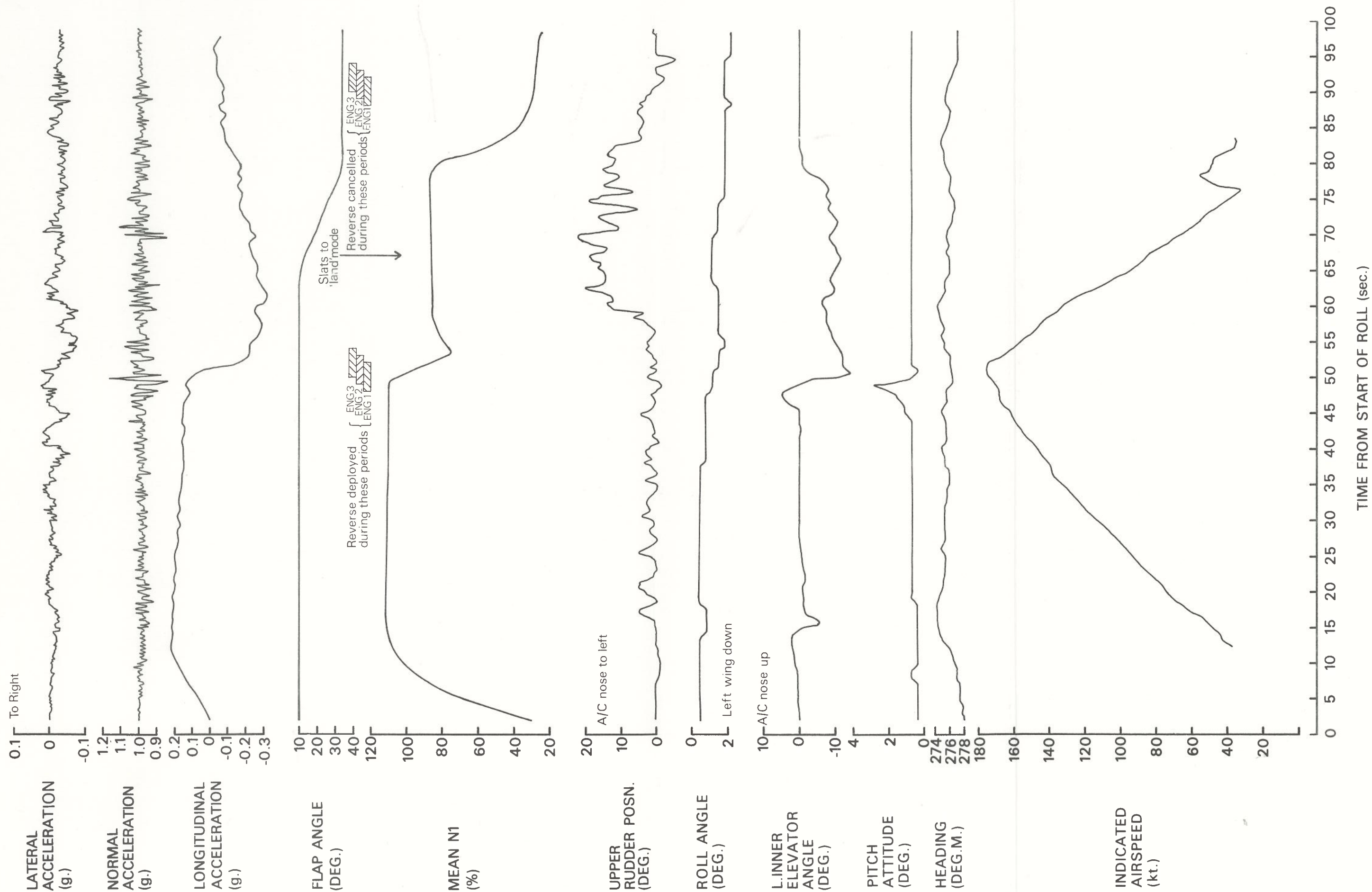
EXTRACT OF THE RTF MESSAGES FROM THE LONDON HEATHROW AIRPORT TOWER FREQUENCY (118.5 MHz)

To	From	Message	Time
HEATHROW TOWER	CHECKER*	BLOCK FIFTEEN CHECKER.	
BA173	HEATHROW TOWER	SPEEDBIRD ONE SEVEN THREE AIRBORNE AT TWO NINE CONTACT LONDON ONE THREE TWO DECIMAL EIGHT.	
HEATHROW TOWER	BA173	SPEEDBIRD ONE SEVEN THREE GOODDAY.	
HEATHROW TOWER	CHECKER	CHECKER IS CLEAR TWO EIGHT RIGHT.	
CHECKER	HEATHROW TOWER	THANK YOU CHECKER.	
PA99	HEATHROW TOWER	CLIPPER NINETY NINE IS CLEAR FOR TAKE- OFF TWO EIGHT RIGHT SOUTH-WESTERLY FIFTEEN KNOTS.	
HEATHROW TOWER	PA99	THANK YOU CLIPPER NINE NINE'S ROLLING.	
CHECKER	HEATHROW TOWER	CHECKER AFTER DEPARTING DC TEN CLEAR TO (1030) RE-ENTER TWO EIGHT RIGHT.	1030
HEATHROW TOWER	CHECKER	AFTER THE DEPARTING DC TEN CHECKER.	
HEATHROW TOWER	BA175	HEATHROW TOWER SPEEDBIRD ONE SEVENTY FIVE HEAVY LISTENING OUT.	
BA175	HEATHROW TOWER	SPEEDBIRD ONE SEVEN FIVE ROGER WHEN THE SWISSAIR DC NINE DEPARTS LINE UP TWO EIGHT RIGHT.	
HEATHROW TOWER	BA175	AFTER THE SWISSAIR LINE UP AND HOLD TWO EIGHT RIGHT SPEEDBIRD ONE SEVEN FIVE.	
HEATHROW TOWER	CHECKER	TOWER CHECKER NATIONAL DC TEN'S BURST ITS STARBOARD TYRE.	
HEATHROW TOWER	CHECKER	TWO EIGHT RIGHT — — — ('CLOSED', confirmed by CVR)	
PA99	HEATHROW TOWER	CLIPPER NINETY NINE YOU'VE BURST A TYRE.	
HEATHROW TOWER	PA99	ABORTING TAKE-OFF. (1031)	1031

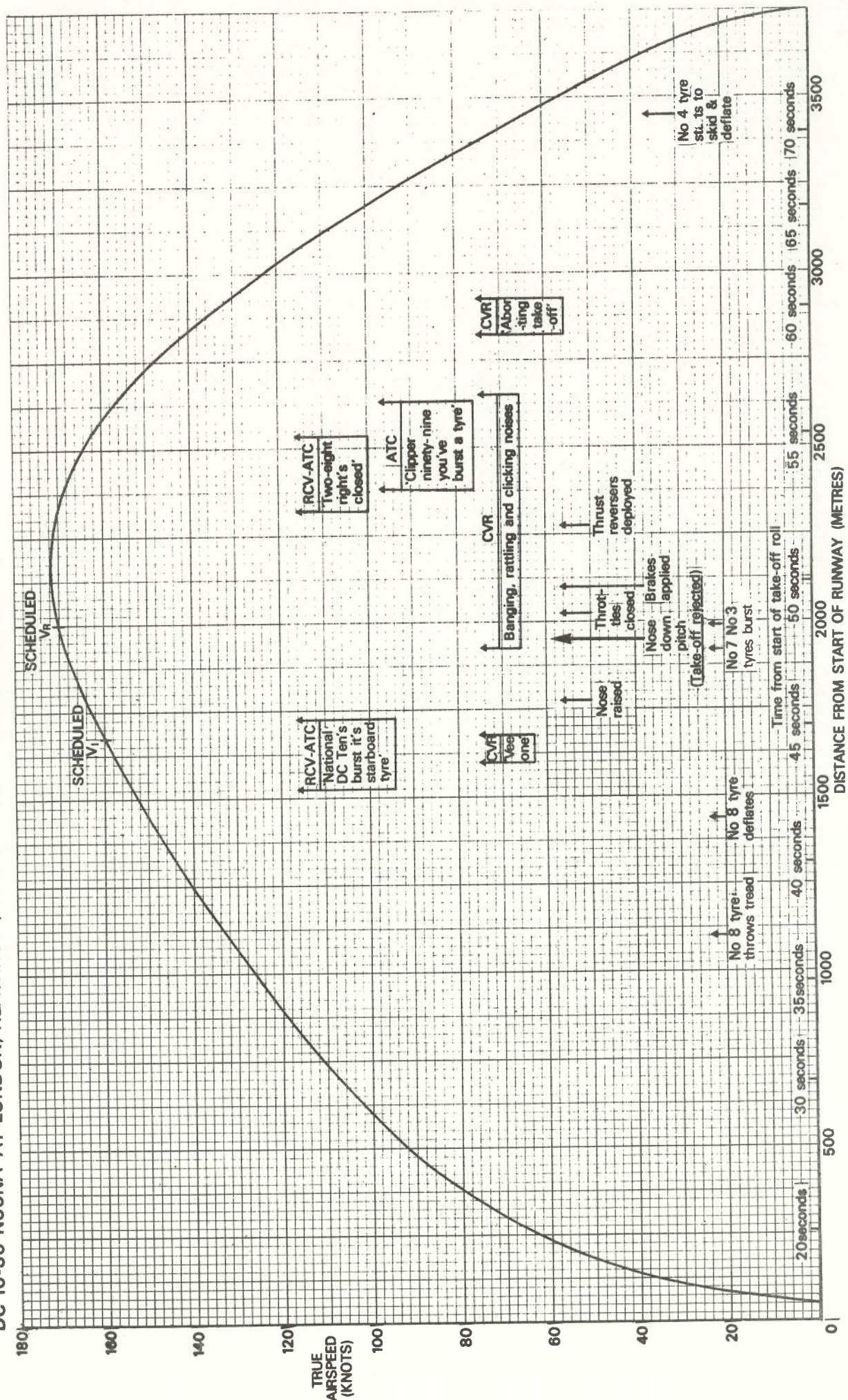
* call-sign of runway clearance vehicle (RCV)

To	From	Message	Time
HEATHROW TOWER	PA99	ER DO WE HAVE A FIRE DO WE HAVE A FIRE?	
PA99	HEATHROW TOWER	YES WE SEE YOU WE'RE SENDING THE VEHICLES FOR YOU RIGHT AWAY.	
HEATHROW TOWER	PA99	— — — OK WHICH SIDE?	
PA99	HEATHROW TOWER	THEY'LL BE COMING FROM BEHIND YOU.	
HEATHROW TOWER	PA99	OK I'LL BE ER — DO WE HAVE A FIRE?	
PA99	HEATHROW TOWER	YOU HAVE A FIRE YES YOU HAVE A FIRE I SHOULD GET OUT IF I WERE YOU.	
HEATHROW TOWER	PA99	OK WE'LL — WE'LL EVACUATE ON THE LEFT SIDE.	
PA99	HEATHROW TOWER	IT'S ON THE RIGHT HAND SIDE.	
HEATHROW TOWER	PA99	OK WE'LL EVACUATE ON THE LEFT.	
PA99	HEATHROW TOWER	RIGHT HAND UNDERCARRIAGE.	
PA99	HEATHROW TOWER	FIRE VEHICLES WILL C — BE COMING UP BEHIND YOU.	1032

DC 10-30, N83NA, REJECTED TAKE -OFF AT LONDON, HEATHROW ON 16 SEPTEMBER 1980
Corrected Flight Data Recorder Information



DC 10-30 N83NA AT LONDON, HEATHROW, 16 SEPTEMBER 1980 REJECTED TAKE-OFF



ACCIDENT TO CONTINENTAL AIRLINES DC10-10 N68045 AT LOS ANGELES ON 1 MARCH 1978

NTSB REPORT AAR-79-1 – SAFETY RECOMMENDATIONS

As a result of this accident, the Safety Board recommended that the Federal Aviation Administration:

- 1 “Assess current tire rating criteria, as used by the Tire & Rim Association and as interpreted by airframe designers and Federal Standards, in terms of compatibility of tire, airframe, and intended operation to assure that adequate margins are provided for all normal conditions”.
- 2 “Upgrade Technical Standard Order C-62b to reflect current engineering practices and operational conditions in both the specifications for performance standards and certification test requirements”.
- 3 “Insure that the tire is compatible with the airframe by considering this compatibility during the airplane certification. Tire loads which result from design peculiarities and normal variations in maintenance and operational practices must be considered”.
- 4 “Issue a new Technical Standard Order to specify performance standards and qualification test requirements for retreaded tires”.
- 5 “Prohibit different model tires or tires manufactured by different manufacturers from being mounted on the same axle where different characteristics between such tires can affect tire loading under normal operating conditions”.
- 6 “Require that operator maintenance and operational practices regarding tire usage, such as taxi speeds and distances and inflation pressures, are in accordance with the tire manufacturers’ recommendations”.
- 7 “Expedite the development of a nondestructive inspection technique which would detect flaws in tire carcasses. Require nondestructive inspection for new and retreaded tires and develop criteria based upon such inspection to withdraw a faulty tire from service”.
- 8 “In the interim, establish a safe upper limit for the number of retread cycles allowed each model tire”.
- 9 “Review and revise the accelerate-stop criteria required to be demonstrated during aircraft certification and used during operations to insure that they consider the effects of wet runway conditions and the most frequent and critical causes of rejected takeoffs”.

- 10 "Evaluate, with industry, the British CAA wet runway normal and rejected takeoff requirements for applicability as a U.S. standard".
- 11 "Revise Advisory Circular 121-14 to provide guidance on (1) programming aircraft simulators to account for the degradation of aircraft deceleration performance on wet runways during landings and rejected take-offs and (2) installing instrumentation to enable evaluation of pilot performance during RTO's on critical length runways, particularly the response times in activating stopping devices and the level of brake application to insure that such performance is compatible with a minimum-distance stop".
- 12 "Encourage operators of turbine engine-powered aircraft to include in flight manuals the maximum use of aircraft deceleration devices when an RTO is initiated at or near decision speed (V_1) on wet or dry runways of critical length".
- 13 "Develop and publish an Advisory Circular, or include in other appropriate documents available to air carrier and other pilots, general accelerate-stop performance data for RTO's on wet runways necessitated by engine and tire failures. Emphasize the need for maximum braking procedures when an RTO is required at high gross weights and speeds".
- 14 "Insure that pilot training programs include appropriate information regarding optimum rejected take-off procedures at maximum weights, on wet and dry runways, and at speeds at or near V_1 , and for rejected take-offs which must be initiated as a result of engine or tire failures".

HEATHROW AIRPORT LONDON

FIGURE 1

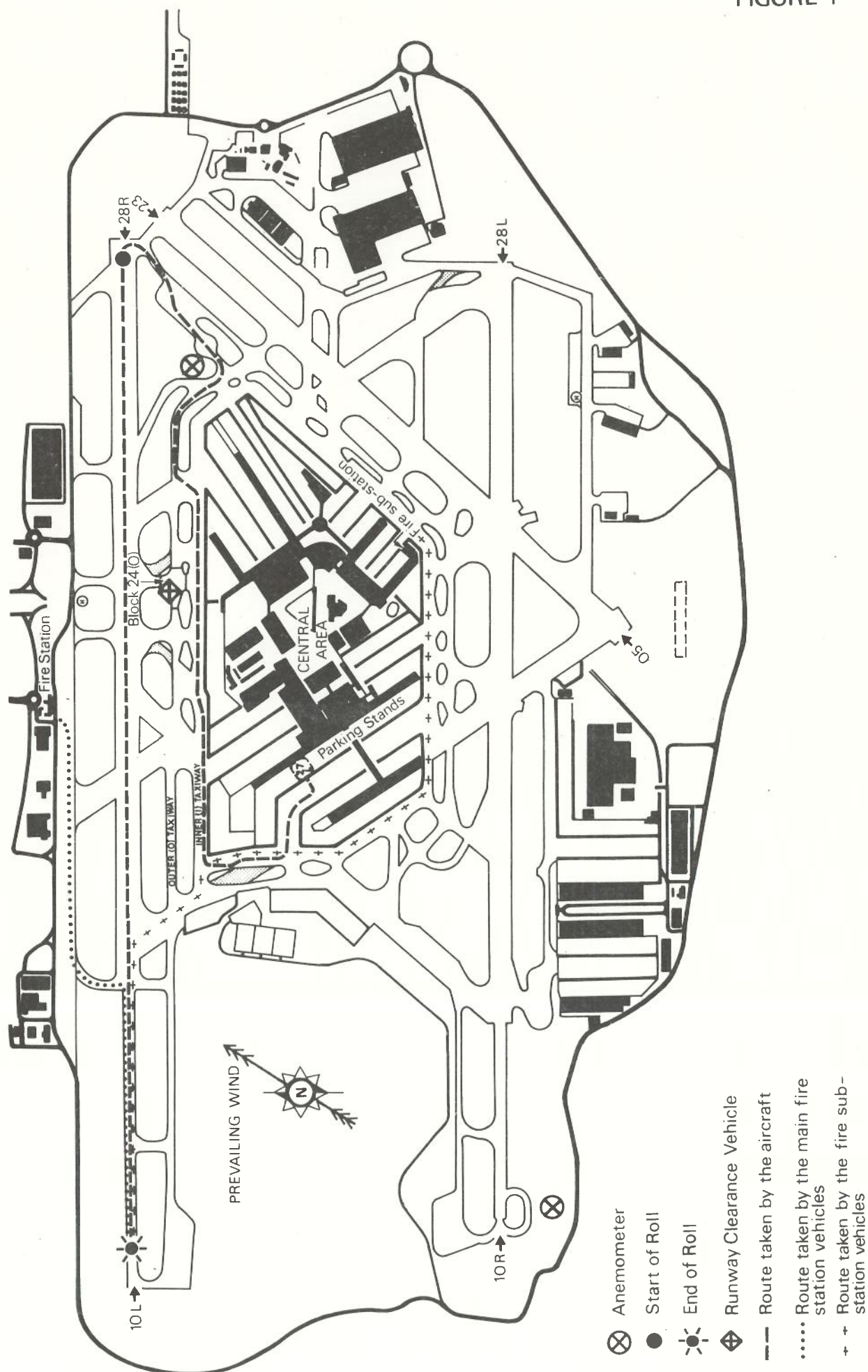
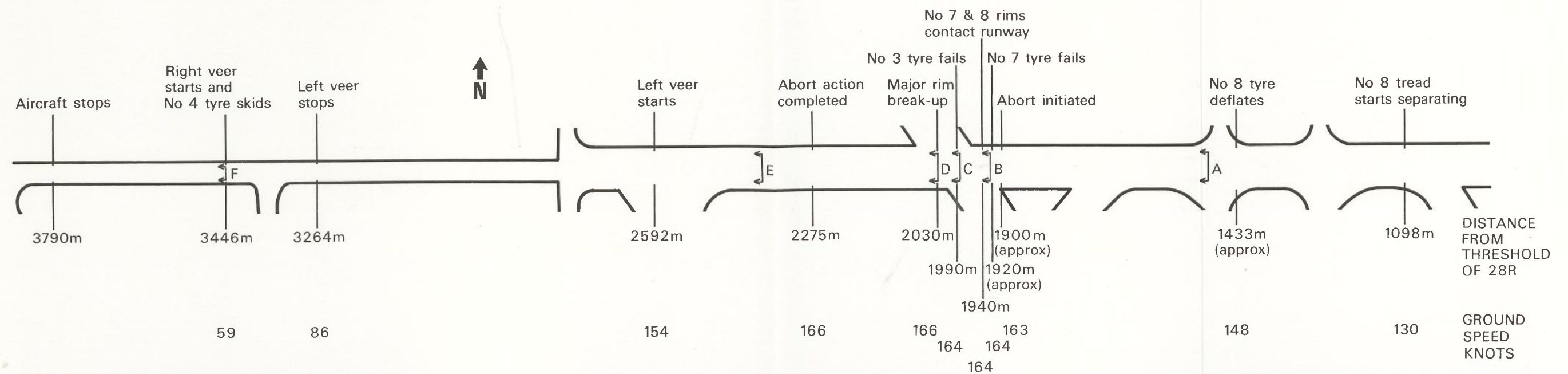


FIGURE 2

SUMMARY OF MARKS AND DEBRIS ON RUNWAY 28R



At right No. 8 wheel rim break up, at left No. 7 wheel rim marks after break up



Pieces of No. 8 tyre carcass and general tyre debris



The deflated No. 8 tyre marks



At centre No. 4 tyre skid mark



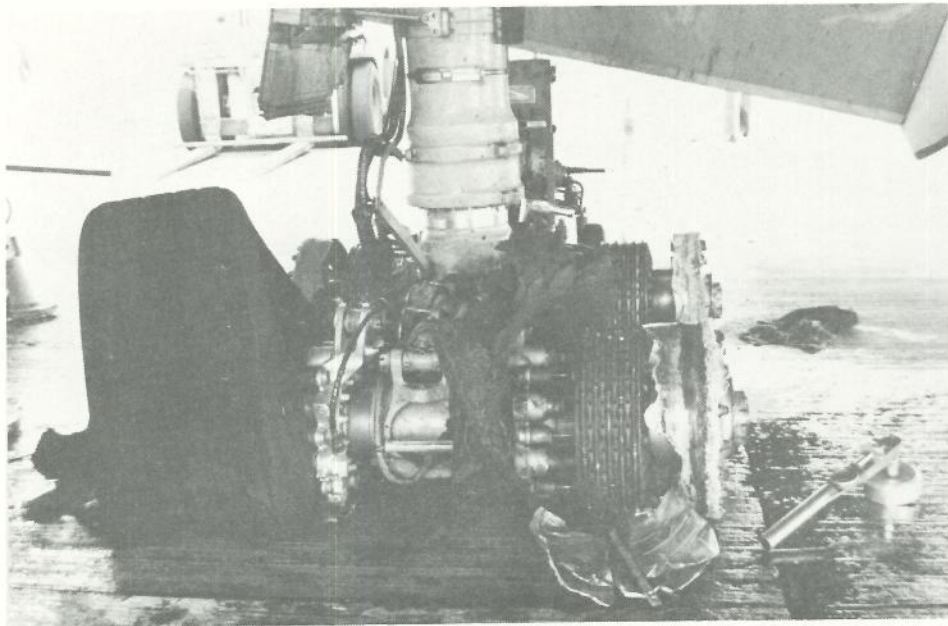
At left No. 7 wheel rim break up, at right No. 8 wheel rim contact marks



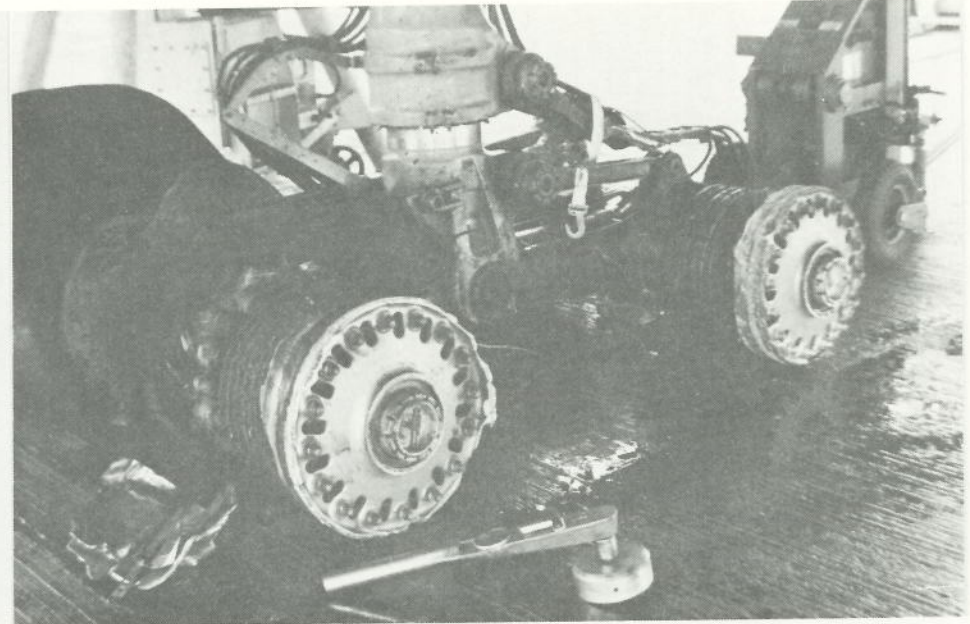
At left No. 7 tyre marks, at right No. 8 tyre marks

DAMAGE TO THE RIGHT MAIN GEAR BOGIE

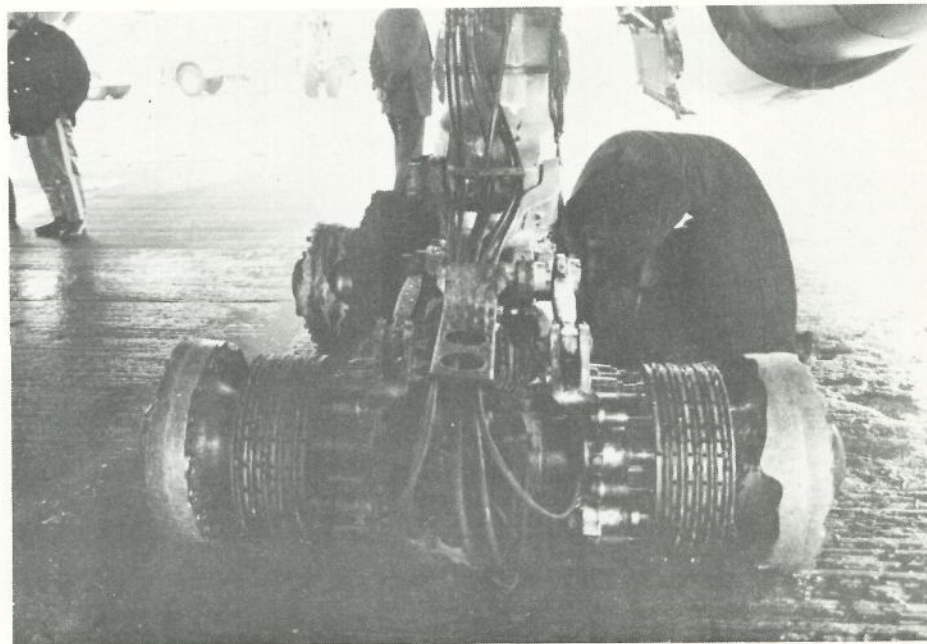
FIGURE 3



At left no.4 tyre/wheel and
at right no.3 wheel ,brakepack
& tyre beads



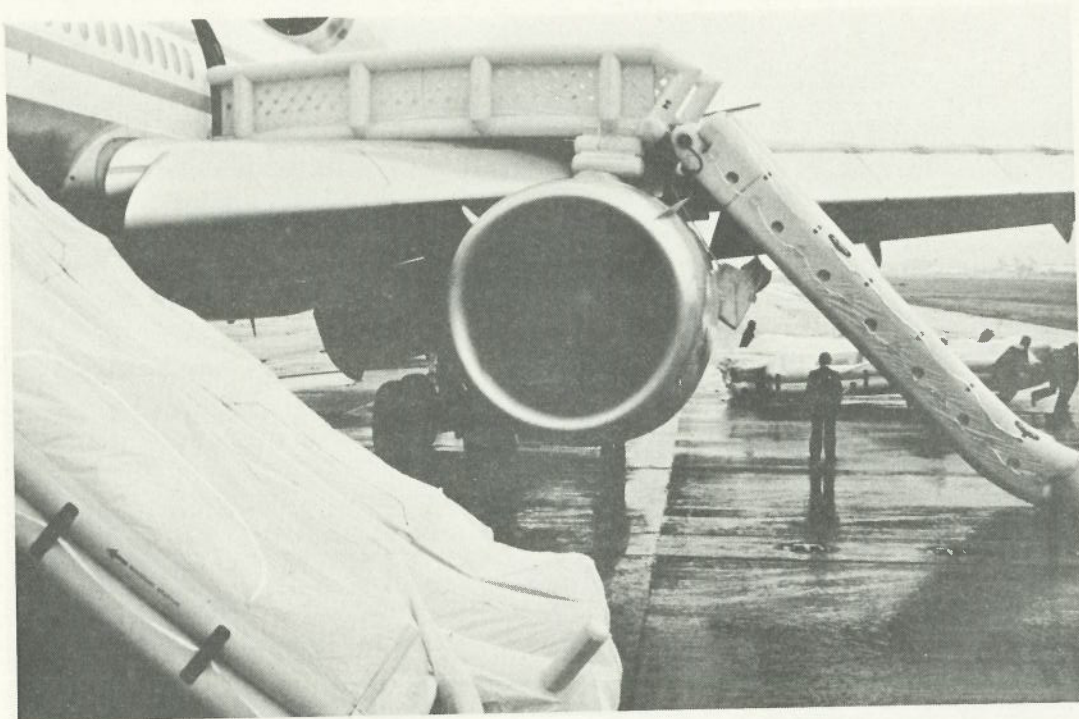
At left no.3 wheel,brakepack
& tyre beads and at right
no.7 wheel and brake pack



At left no. 7 and at right no.8
wheels and brakepacks

DEPLOYED SLIDES

FIGURE 4



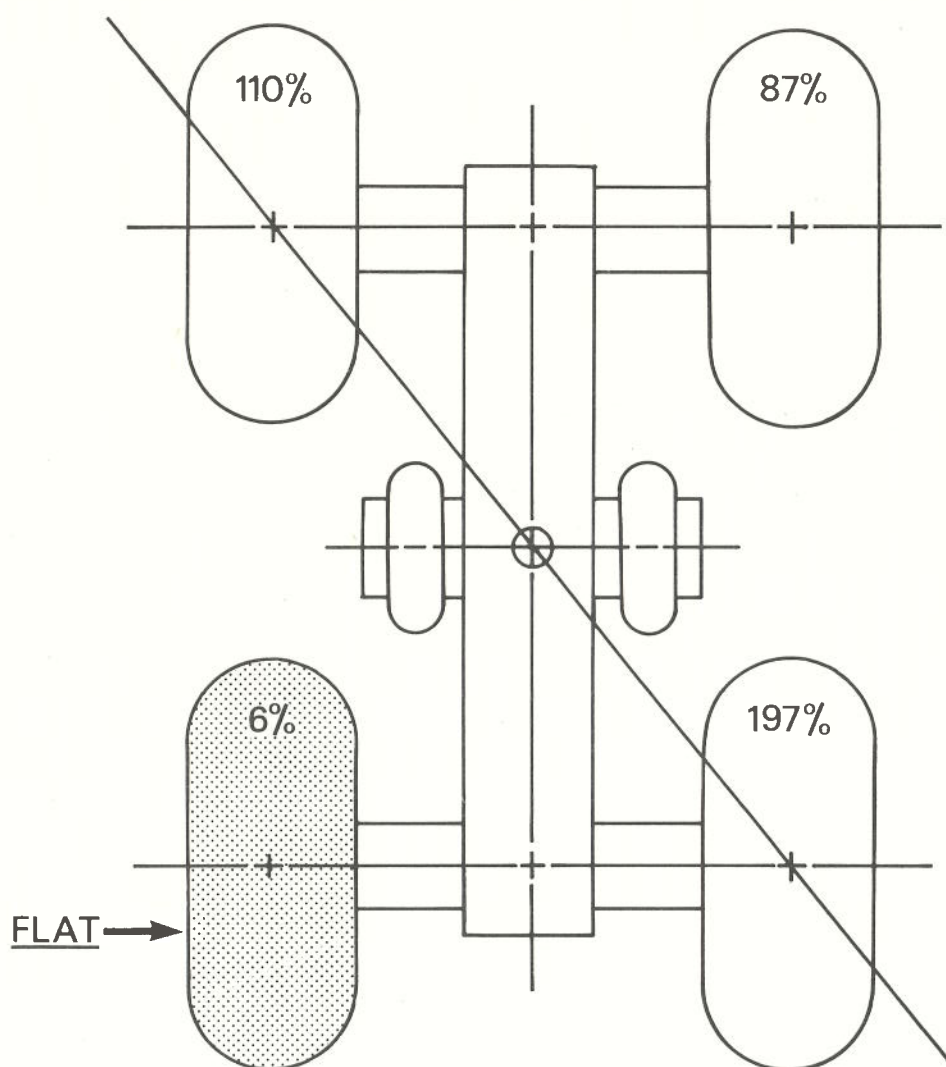
No.3 (The overwing) slide deployed , with no.2 in the foreground



No.4 Slide/raft deployed

FIGURE 5

DC 10-30 MAIN BOGIE SINGLE WHEEL LOAD DISTRIBUTION (Flat Tyre Case)



Source: Robert Rothi, Chief, Hydro-mechanical Design, McDonnell-Douglas, Long Beach, California.

Note: Moments do not balance because of unmeasured forces caused by the soft tyre.