



BAAI.

Special Investigation

Report 833-1017

Search and Rescue Activities
Associated with the Ditching of
Rockwell 685 Aircraft VH-WJC in
Bass Strait, Tasmania 17 July 1983

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The Secretary to the Department of Aviation authorised this investigation and the publication of this report pursuant to the powers conferred by Air Navigation Regulations 278 and 283 respectively.

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Special Investigation Report

SEARCH AND RESCUE ACTIVITIES ASSOCIATED WITH THE DITCHING OF ROCKWELL 685 AIRCRAFT VH-WJC IN BASS STRAIT, TASMANIA ON 17 JULY 1983.

Note: All times are Australian Eastern Standard Time (Greenwich Mean Time plus 10 hours).

Synopsis

At about 1505 hours on 17 July 1983, Rockwell (Aero Commander) 685 aircraft VH-WJC ditched in Bass Strait while on a flight from Hobart to Moorabbin. Search and Rescue activities were initiated and, approximately 50 minutes after the accident, a survivor in a life jacket was sighted by a searching aircraft. Support and rescue efforts were unsuccessful and contact with the survivor was lost about two hours after the ditching. Neither occupant of the aircraft was rescued and the wreckage was not recovered. The Search and Rescue activities were terminated at 1900 hours on 19 July 1983.

1. Background Information

1.1 HISTORY OF THE FLIGHT

On 17 July 1983 the pilot of Rockwell (Aero Commander) 685 aircraft VH-WJC submitted a flight plan to the Hobart Briefing Office for a private category flight from Hobart to Moorabbin, tracking via Launceston and Wonthaggi. The plan indicated that the flight would be conducted under the Instrument Flight Rules (IFR) at Flight Level 120 (12 000 feet altitude on standard atmospheric pressure of 1013.2 millibars), with two persons on board.

The flight plan showed that the aircraft had a fuel endurance of 220 minutes, and carried an Emergency Locator Beacon (ELB) and life jackets. There was no indication that a life raft was carried.

The aircraft departed Hobart at 1352 hours and, thereafter, the pilot made the appropriate radio reports to Hobart Tower, Launceston Control and Launceston Tower.

The flight apparently progressed normally until 1452 hours when the pilot advised Launceston Control, "Er Whiskey Juliet Charlie we seem to have been in trouble with er fuel here the red er warning light comes on and the gauge is down . . .". At 1454 hours the pilot transmitted a Mayday call, indicating that he was descending from Flight Level 120 on track to Bass (a position reporting point), present position was 85 nautical miles (nm) from Launceston and he would be making a controlled ditching.

Launceston Control immediately initiated the Distress phase of the Search and Rescue procedures and advised the Melbourne Operational Control Centre (OCC).

Further communications between the aircraft and Launceston Control indicated that the aircraft was continuing descent on track towards Wonthaggi. The last position report from the pilot, at 1500 hours, was 94 nm from Wonthaggi.

The last recorded transmission from the aircraft was at 1501 hours when the pilot confirmed that there were two persons on board.

There were no indications at any time from the pilot that the fuel supply had been exhausted or that either engine had failed.

It was estimated that the aircraft ditched at about 1505 hours, at an approximate position of 81 nm from Wonthaggi on the planned track (see Appendix I).

1.2 SEARCH AND RESCUE ACTIVITIES

At 1455 hours, when the Melbourne OCC received advice from Launceston Control that a Distress phase had been declared in respect of VH-WJC, the Melbourne Rescue Co-ordination Centre (RCC) was deemed to be active. The aircraft was at all times in the Search and Rescue Region under the responsibility of the Melbourne RCC.

In accordance with standard procedures, the Senior Operations Controller (SOC) assumed the role of the Search and Rescue Mission Co-ordinator (SARMC). Activity in the OCC was such that he elected to retain the duties of the SOC and remain at the SOC position in the OCC. The SARMC appointed one of the two duty Operations Flight Controllers (OFC) as Assistant SARMC (A/SARMC), combined the two OFC functions under the other OFC, and appointed a trainee Air Traffic Controller (ATC) as the recorder of the SAR activities.

A Meteorological Briefing Officer was arranged to provide weather information as required and the next shift of OCC staff were called out early to provide relief.

Relief staff commenced to arrive at 1550 and all OCC positions were manned by 1630. The personnel involved with the SAR activities transferred to the adjacent RCC area at 1755 hours.

Full details of the activities for the first day are contained in Appendix II, Sequence of Events.

Manning of the RCC continued on a three shift roster, planned for such contingencies, until the SAR activities were terminated.

1.3 SEARCH AND RESCUE PROCEDURES

Procedures for the proper conduct of Search and Rescue functions of Air Traffic Control are detailed in Airways Operations Instructions (AOI) Volume 2/SAR and Volume 4. These instructions are produced by the Department of Aviation for the direction of airways operations personnel.

Broadly interpreted the instructions indicate that the role of the SAR organisation in a ditching situation can be broken down into the following elements:

- assisting the pilot prior to ditching
- searching for survivors
- fixing the position of survivors
- maintaining contact with survivors
- directing support and rescue aircraft and vessels to the scene
- providing support to survivors
- rescuing survivors
- providing effective communications
- ensuring the safety of all personnel.

The responsibility for the overall co-ordination of SAR action involving civil aircraft

lies with the Department of Aviation Rescue Co-ordination Centre in which Search and Rescue Region the aircraft is located.

The RCC draws upon other authorities for assistance in providing aircraft and surface vessels for SAR purposes. In this case the authorities involved were the RAAF, RAN, Australian Coastal Surveillance Centre (ACSC), Victoria Police and Tasmania Police.

The RCC maintains an index of suitable search, support and rescue aircraft together with check lists of the immediate actions required in the event of a ditching. These check lists are used to monitor the RCC activity and the efficient deployment of SAR resources.

Civil aircraft are requisitioned as required and assistance is obtained from voluntary and commercial organisations having aircraft equipped for SAR purposes.

The Melbourne OCC is manned 24 hours per day in accordance with a published roster. The number of officers rostered varies according to the time of day and the activity level anticipated but is the same for each day of the week.

The manning of the OCC at the time of the ditching was:

- Senior Operations Controller (SOC)
- two Operations Flight Controllers (OFC)
- one Operations Departure Controller (ODC)
- two Operations Flight Data Officers (OFD).

Additional personnel in the OCC were an Air Traffic Controller, undergoing operational control training, and the duty Meteorological Briefing Officer.

The AOIs also recommend that, by preference, the use of single-engine aircraft should be restricted to areas where the terrain would permit forced landings.

2. Discussion

2.1 INTRODUCTION

The SAR activities associated with this accident will be considered by examining each of the elements identified in Section 1.3. The sequence of events is contained in Appendix II and a summary of critical events follows:

<i>Time</i>	<i>Aircraft</i>	<i>Event</i>
1452	Rockwell 685 VH-WJC	Fuel problem reported
1454	Rockwell 685 VH-WJC	Mayday call. Distress phase declared by Launceston control
1501	Rockwell 685 VH-WJC	Last transmission received from aircraft
1545	Fokker F27 VH-FNO	Slick sighted, unable to fix position
1553	Fokker F27 VH-FNO	Survivor in life jacket sighted
1630	Fokker F27 VH-FNO	Approximate time movement of survivor last seen
1633	Fokker F27 VH-EWS	Joined VH-FNO, reported position as Wonthaggi 140 degree radial, 81 DME
1644	Fokker F27 VH-EWS	Survivor sighted, still moving his arms

1707	Fokker F27 VH-EWS	Approximate time of last sighting of survivor, not moving and apparently unconscious
1713	Fokker F27 VH-FNO	Approximate time of last sighting of survivor
1718	AS 365C VH-PVF	Approximate time PVF joined FNO and EWS
1725	Fokker F27 VH-FNO	Departed search area. Light fading rapidly. No signs of survivor
1725	Bell 212 VH-NSC	Joined EWS and PVF
1736	Fokker F27 VH-EWS	Departed search area
1740		Last Light
1800	Bell 212 VH-NSC	Departed search area
1805	AS 365C VH-PVF	Departed search area

2.2 ASSISTANCE TO THE PILOT PRIOR TO DITCHING

During the period from 1452 to 1505 (the estimated ditching time) the following action was taken to assist the pilot:

- Launceston Control offered WJC a diversion to Devonport.
- EQT was diverted towards the area as a possible escort and was requested to call WJC.
- Melbourne RCC requested advice from Melbourne AACC on possible escort aircraft.
- A ditching forecast was prepared by the RCC and relayed to WJC by Launceston Control (no response was received from WJC).
- Attempts were made to contact an experienced pilot to obtain advice on ditching an Aero Commander type aircraft. These were not successful in the time available.

Further calls were made to WJC by Launceston Control, Launceston Flight Service and aircraft in the area. There was no response.

Within nine minutes of the last transmission heard from WJC, FNO and ATE had been diverted to the area.

2.3 SEARCH FOR SURVIVORS

The first search action taken was at 1508 when FNO, which was then en route from Melbourne to Devonport on a scheduled passenger service, was diverted to intercept the 147 radial of Wonthaggi VHF Omni Range (VOR). FNO was requested to carry out a visual search southbound on the radial to 100 nm Wonthaggi, then search northbound on the same radial.

The selection of FNO as the primary search aircraft was based on the suitability of the F27 as a visual search platform, and the fact that it was already airborne and would be the first suitable aircraft able to reach the search area. At that time the extent of the cloud cover in the search area was not known to the SARMC and so it was not appreciated that visual search would require descent to low altitudes. The cloud cover was found to be 6 to 7 OKTAS, base 1000 feet.

When the low-level requirement did become apparent it was recognised that normal operational standards applicable to RPT operations would be compromised. This was accepted in the circumstances of the emergency.

Visibility below the cloud was good at that time. The only reported adverse weather in the search area was distant isolated rain showers. FNO searched initially at 1000 feet, later at 500 feet.

The second aircraft to be diverted to the search area was ATE, a Department of Aviation F28 aircraft. It was also airborne, nearing Melbourne on a flight from Canberra, and could therefore reach the area quickly.

The part played by ATE in the initial SAR action was limited. It arrived in the search area at 1520 but was forced to divert to Launceston at 1609 to refuel.

After remaining at altitude initially to act as a radio relay, ATE commenced a visual search northbound from Bass on the Wonthaggi 147 radial, descending to 1000 feet. After the sighting reports from FNO, ATE was used primarily in unsuccessful attempts to fix the position, using the Inertial Navigation System (INS) with which it is equipped.

There was a limit to the number of aircraft that could be used for search because of the small area of probability and the low cloud base. EWS was in the area by 1535 for use on search if required. Following the sightings by FNO, there was no requirement to use EWS in the initial search action.

Aircraft in the area were requested to listen out for an ELB signal on 121.5 MegaHertz (MHz) but nothing was heard.

Under agreed procedures, a marine search was conducted on behalf of the RCC by the ACSC. The first contact with the ACSC was not until 1551 at which time the RCC requested advice of shipping in the area. This delay was apparently the result of an oversight, with the high workload of the RCC a probable factor. The omission was detected when the SARMC referred to the ditching checklist held by the RCC.

The ACSC reported that the Lysaght Endeavour was the closest vessel, some 20 nm to the north. No other ships were close enough to reach the area during the initial search phase. Lysaght Endeavour was diverted to the search area and commenced search at about 1817.

A survivor in a lifejacket was sighted by FNO at 1553 and contact was retained until about 1713. The survivor was also sighted by EWS at 1644 and contact was maintained until about 1707. At no time was a life raft sighted.

On 18 July the Bureau of Meteorology advised that for 17 and 18 July the surface temperature in the area was 12 degrees Celsius and the water temperature 12 degrees Celsius at night and 13 degrees Celsius during the day.

The Aviation Medicine Branch of the Department of Aviation advised that survival of a person in the water at those temperatures would be marginal after 1.5 hours and unlikely after 6-7 hours.

The decision to terminate the search at 1900 on 19 July was based on the following considerations:

- There was no possibility of a person in a life jacket having survived.
- The area had been thoroughly searched from the air with no sightings of a life raft.

2.4 FIXING THE POSITION OF THE SURVIVOR

Considerable difficulty was experienced in fixing the survivor's position accurately. WJC had not been observed on Melbourne radar because of its low altitude and FNO, having had to descend below the cloud layer to carry out the visual search, had been unable to receive the Wonthaggi VOR or Distance Measuring Equipment (DME) on either its southbound or northbound runs.

The sighting position reported by FNO at 1553, on the 147 radial of the Wonthaggi VOR with Rodondo Island bearing 030 degrees, was based on dead reckoning navigation in respect of the radial and the sighting of an island. The island was later determined to be Curtis Island.

The reported radial appears to have been commendably accurate and the erroneous identification of the island was understandable in the difficult circumstances.

The low cloud meant that FNO could not climb to the minimum reception height for VOR and DME without losing sight of the person in the water, and EWS and ATE, both still above the cloud at this stage, could not sight FNO.

At the time of FNO's position report the difficulties being experienced were appreciated by the SARMC, who then initiated attempts to obtain a better fix by utilising an INS-equipped aircraft. This was imperative so that support and rescue aircraft could be directed to the scene accurately and without unnecessary search time in the area.

The first attempt by ATE to establish an INS position was ineffective because FNO was not sighted before ATE had to depart the area for refuelling.

A more accurate position was eventually fixed by EWS when he tracked out with VOR and DME reception to 78 DME, descended below the cloud, sighted FNO and timed the interval from the last DME reading to his joining FNO. The position so found was reported at 1633 by EWS as Wonthaggi 140 radial 81 DME (see Appendix I).

It was determined during the investigation that this report was incorrect and should have referenced the 147 radial, but this did not lead to any significant delays in getting the helicopters to the scene. The difference in the two positions was about nine nm but by the time the helicopters arrived the light conditions were such that they were able to sight the F27's lights in good time and only small heading corrections were required.

A further attempt by ATE, on its return to the area after refuelling, to establish an INS position was also unsuccessful. Although an INS position was reported by ATE at 1817 (see Appendix I) by this time there had been no visual contact with either the slick or the person in the water for about one hour. The INS position was in fact taken by ATE on a sighting of PCV which in turn was attempting to remain in the position from which the helicopters had departed some 12 minutes earlier.

2.5 MAINTENANCE OF CONTACT WITH THE SURVIVOR

Once FNO had established contact with the survivor there was no real alternative to using this aircraft to maintain contact until rescue or support aircraft could reach the scene. It would have been desirable to hand over this task to a non-passenger-carrying aircraft but none was close at this stage.

Contact was maintained for about 1.5 hours, the task becoming progressively more difficult as the light began to fade badly well before Last Light, and the oil slick gradually dispersed.

The SARMC recognised that the situation which eventually developed, with two passenger-carrying F27s circling at low-level in fading light and maintaining visual separation, was undesirable. It arose, however, out of the need to quickly confirm FNO's position after the initial sighting and to maintain contact until the helicopters arrived. In addition, it was becoming apparent that it would be touch and go whether the rescue aircraft arrived before FNO was forced to depart the scene, and EWS was the only suitable aircraft immediately available.

In the event, the time on station for both F27s was extended to the absolute maximum by giving them dispensation to arrive at Melbourne without traffic-holding fuel. The first helicopter, PVF, arrived at about 1718 and for a short time the three aircraft were operating in the same area at low level until FNO left at 1725, at which time NSC arrived.

Contact with the slick and the person in the water was lost about five minutes before PVF arrived and subsequent efforts to regain contact were to no avail.

2.6 DIRECTION OF SUPPORT AND RESCUE AIRCRAFT TO THE SCENE

The position was fixed with sufficient accuracy to allow the support and rescue aircraft to reach the scene without difficulty.

The only thing which could have caused a problem was the misreporting by EWS of the 140 radial instead of the 147. In the event this caused no problem and, as discussed earlier, did not affect the outcome of the rescue attempt.

2.7 PROVISION OF SUPPORT TO THE SURVIVOR

2.7.1 Introduction

The support element concerns the measures taken to provide support to persons sighted in the water until rescue can be effected.

Marine support equipment is stored at various Departmental locations. For Bass Strait these are Launceston and Melbourne Airports. Wherever possible use is made of linked kits, typically Marine Supply Containers to which two life rafts are attached by lines thus allowing a much better chance of making contact with persons in the water than with a single raft.

The kit must be delivered accurately so that it will drift down to the survivor; it is unlikely that a person could be able to swim any distance in pursuit of a raft after even a relatively short time in the water. To this end closely controlled dropping procedures are essential, and a trained Dropmaster is required to supervise the preparation of the aircraft and the execution of the drop.

All Dropmasters are Air Traffic Controllers and are located at the same places the stores are kept. There are three Dropmasters stationed at Launceston and nine at Melbourne.

The training of Launceston and Melbourne Dropmasters is carried out on airline F27 aircraft, with a minimum of one exercise per year.

No training exercises are carried out at Melbourne or Launceston involving pilots, Dropmasters or maintenance personnel in the preparation and use of General Aviation (GA) aircraft for supply dropping.

Supply dropping from most GA aircraft necessitates approval for door-off operations. Aircraft so approved are listed in appropriate Departmental reference documents and a Flight Manual Supplement is issued, the latter specifying operational limitations including in most cases a restriction to VFR operations only.

2.7.2 Support action

The support action taken, in respect of the individual aircraft involved, is discussed below.

Aero Commander 680FL VH-EXZ At 1458, three minutes after he had been advised of the Distress Phase on WJC, the SARMC requested advice from Launceston Control on the availability of an Aero Commander for supply dropping.

Launceston Control advised that EXZ was on the ground at Wynyard, loaded with passengers and cargo, and ready to depart on a commuter service to King Island. The SARMC requested that EXZ off-load the passengers and return to Launceston for preparation. This request was relayed to the pilot via Launceston Control and Wynyard Flight Service.

The pilot of EXZ had no previous experience of SAR action and, at some stage, there was a breakdown in communications. The pilot apparently did not appreciate the urgency

of the situation and appears not to have understood that his aircraft was required for supply dropping rather than searching. He also suggested that PA31 TZY, on the ground at Launceston, should be used instead of EXZ, and made a telephone call to consult his company.

A company officer then called Launceston Briefing Office and suggested that ACM 690 PCV, on company standby at Hobart, would be more suitable. He was advised that EXZ was still required and he passed this information on to the pilot.

The aircraft did not depart Wynyard until 1535 and landed at Launceston at 1602, about one hour after the first request.

The reason for the delays experienced was not understood by the SARMC. There was an extended communication chain with several intermediaries and he was told that the pilot and/or the company were unwilling to co-operate. The reaction of the pilot in wanting to consult his employer was an understandable one in the circumstances. A better approach by the RCC would appear to have been to attempt a direct contact with the company as to the availability of suitable supply dropping aircraft.

The Aero Commander 680FL is in fact unsuitable for supply dropping because the only door accessible in flight is forward of the propellers. Door location varies between different models of Aero Commanders and the SARMC thought EXZ was a 680 model with a rear cabin door. He did not check on this aspect at the time and did not become aware of the misconception until the action was over. Neither the pilot nor the company seem to have appreciated that the aircraft was required for supply dropping, as no mention was made of the cabin door location.

The attempts to get EXZ organised occupied a great deal of the SARMC's time during a critical period of high workload on the RCC. The apparently inexplicable delays undoubtedly caused frustration and concern, possibly to the detriment of the efficient operation of the RCC.

The aircraft was relegated to standby status before it departed Wynyard for Launceston, when TZY became the primary drop aircraft at 1511. No action was taken at Launceston to prepare EXZ and it took no further part in the SAR action.

Piper PA31-350 VH-TZY This aircraft, operated by the same company as EXZ, was on the ground at Launceston being prepared for departure to Flinders Island on a commuter service. At 1511 it was accepted as the primary drop aircraft since it was already at Launceston.

The only Dropmaster available at Launceston on short notice was on duty in the Area Control Centre. Action was taken to call out a relief officer as soon as the SARMC asked for a drop aircraft, but relief was not immediately available and this resulted in a short delay in commencing the preparation for the drop.

The Dropmaster had not previously carried out a drop from a PA31. The preparation for the drop included the following actions:

- telephone calls to obtain a briefing from the RCC on the makeup of the marine kit to be used in this instance;
- discussion of whether one or both sections of the two-part cabin door needed to be removed for the drop;
- removal of the doors by maintenance personnel;
- preparation of the multi-unit drop equipment;
- transport of the equipment from the upstairs store in the terminal building to the aircraft;
- removal of some of the aircraft seats, the need for which was not appreciated until the Dropmaster arrived at the aircraft;
- securing the drop equipment in the aircraft cabin;

- rigging of safety harness and static lines; and
- briefing of the pilot.

In addition, it was found that there was no door-off supplement in this aircraft's Flight Manual and a lengthy telephone call was made to the RCC in order to obtain the necessary information. The Flight Manual supplement for the PA31-310 was read out to the Dropmaster who made appropriate amendments to a copy of the supplement for another aircraft type. The necessary cockpit placard was also prepared.

The actual preparation time, from the decision to use TZY as the primary drop aircraft to its departure, was 79 minutes. In consideration of the unfamiliarity of both the pilot and the Dropmaster with the task, and the need to refer several times to the RCC for relevant information, it is apparent that all concerned with the preparation did their utmost to get the aircraft away.

The time taken, however, was considerably longer than the SARMC's initial expectation of about 45 minutes. The SARMC enquired several times about the estimated departure time and made sure that Launceston was aware that a survivor had in fact been sighted, emphasising the urgency of the task.

The actual departure time of TZY was 1630. Three minutes after departure low cloud and rain were encountered which the pilot assessed as unsuitable for VFR operations. As the door-off operation was restricted to VFR only, the pilot returned to Launceston and landed at 1640.

A telephone discussion between the SARMC and the pilot ensued, in which the pilot was advised that a dispensation had been arranged for Instrument Flight Rules (IFR) operation with the door off. The pilot elected not to proceed IFR, principally because he was not happy with the aircraft handling with the door off. This decision rested with the pilot, he being primarily responsible for the safety of the aircraft and its occupants. The Dropmaster supported the decision, the SARMC did not question it and TZY was stood down.

The decision to stand down TZY is considered to have been correct under the circumstances and had no influence on the SAR action. By this time it was clear that the only real hope of survival for the person in the water lay in his early rescue. Even if TZY had been successful on its first attempt it would have arrived on the scene at about 1715, which was about the time that the survivor was last sighted. By this time the person would have been in the water for over two hours and his ability to secure and board a raft is doubtful, as evidenced by the report from the pilot of EWS that, when last seen, the person had been apparently unconscious.

The deterioration of the weather along the northern VFR departure routes from Launceston was apparently unknown to anyone who was also aware that the door-off operation of TZY was limited to VFR. The poor weather was approaching from the north-west and did not reach the airport until much later.

It was later found that there was no Flight Manual supplement for door-off operation of a PA31-350, only for the PA31-310. Therefore TZY was technically not approved for supply dropping.

Aero Commander 690A VH-PCV At 1534 Hobart Briefing Office was requested to despatch PCV to Launceston as soon as possible, and 15 minutes later the RCC advised Launceston that this aircraft would be second priority to TZY for supply dropping. The aircraft arrived at Launceston about the time that TZY departed.

In the event, no dropping action was undertaken in respect of PCV, but it was despatched quickly to the search area after its arrival at Launceston, departing at about the time that TZY returned.

As a Model 690A with only a forward cabin door PCV, like EXZ, was unsuitable for the dropping role, a disqualification not recognised by the RCC at the time.

Britten-Norman BN2-A VH-EQT Although this aircraft was diverted toward Launceston at 1506 to pick up dropping equipment, it was released at 1534, when PCV was selected, and took no further part in the SAR action.

Royal Australian Air Force The RAAF was contacted at 1620 regarding the availability of aircraft with dropping capability. At 1630 the RAAF advised that there were no aircraft airborne in the Melbourne Flight Information Region (FIR). East Sale had HS748 aircraft available on three-hour standby but they had no dropping capability.

Department of Aviation No aircraft with dropping capability were available at the Departmental Flying Unit, Essendon Airport.

Other options available No approach was made to airline operators at Melbourne Airport in respect of the availability of F27 aircraft for support purposes. The SARMC stated that this decision had been based on his past experience with response times for F27s, both in exercises and actual situations, and on his estimate that the response time would have been too long in this case.

Later advice from the two operators concerned indicated that each had an F27 on the ground at Melbourne at that time. A crew was also immediately available, having signed on at 1445 in preparation for a scheduled departure at 1545. Ground staff were available and one of the operators estimated that the aircraft could have been prepared for supply dropping in about 45 minutes if a request had been received at about 1500. The other operator estimated that their response time would have been between 1-1.5 hours.

While it is by no means certain that the estimated response time of 45 minutes would have been achieved, this is considered to have represented the best chance of getting support equipment to the scene in time to be effective. A Dropmaster was available, stores were held close by on the second floor of the terminal building, all recent drop training had been carried out on F27s, and these are probably the most suitable dropping aircraft available.

The decision to not contact the Melbourne F27 operators, on the basis of an assumption as to their likely response time, appears to have been an error of judgement.

A number of GA aircraft suitable for dropping were available at Essendon and Moorabbin, but to prepare them would have involved positioning to Melbourne where a Dropmaster and stores were available. This was considered to involve too great a time penalty and no action was taken in respect of these aircraft.

Twin-engine helicopters with life rafts were available. For example, at Welshpool there were Bell 212 helicopters with an operator-estimated response time of five minutes. Those helicopters were not considered for the support role, principally because the effectiveness of a single raft drop was considered very doubtful on the basis of experience.

2.8 RESCUE OF THE SURVIVOR

2.8.1 Actions taken

Rescue action was initiated soon after WJC failed to respond to the transmission by Launceston of the ditching forecast. The SARMC asked the A/SARMC to call the National Safety Council of Australia (NSCA) at Latrobe Valley to determine the availability of their Bell 212 helicopter VH-NSC which was equipped with a winch.

The A/SARMC used a telephone in an adjoining office and, in the course of his conversation with NSCA, during which he was advised that NSC was on the ground at Latrobe Valley, called out to the SARMC as to whether he wanted NSC to come to Moorabbin straight away to refuel. The SARMC replied in the affirmative. Later, the SARMC reported that this response was based on his interpretation that NSC was in the air near Moorabbin at the time and, further, that he would have expected the A/SARMC to

have sent NSC to a forward base such as Tidal River had it then been on the ground at Latrobe Valley.

The A/SARMC later reported that he had not been aware of any misunderstanding between himself and the SARMC as to the position of NSC at the time. He further reported that he had been unsure of the decision to send NSC to Moorabbin but accepted it because he felt that he did not have the full picture at that stage. He thought about discussing the matter with the SARMC but quickly became busy with other duties and did not do so.

At 1536 the RCC alerted the Victoria Police and soon afterwards the Police AS365C helicopter, VH-PVF was placed on standby at Essendon, the RCC being advised that the aircraft's winch was unserviceable. The SARMC later reported that he had been previously aware of the winch unserviceability and that this was the reason for an apparent delay in contacting the Police; he considered that even without the winch PVF was still a good back-up helicopter because of its experienced, professional rescue crew and the carriage of some support equipment.

Shortly after the sighting of a survivor was reported to the RCC, PVF was requested to depart Essendon for the search area as soon as possible. The aircraft departed within 10 minutes, having been advised of the best estimate for the ditching position as the Wonthaggi 147 radial 94 DME. This position was updated en route as the 140 radial 81 DME (on the basis of the EWS report at 1633).

At 1615 NSC landed at Moorabbin and, after priority refuelling and a telephone briefing, departed for the search area 13 minutes later.

Both helicopters made the best possible speed to the distress scene. They were monitoring the F27 communications and heard the reports concerning the person in the water, the loss of sighting, etc.

PVF arrived first and, having acquired visual contact with the F27s immediately on descending below the cloud, was at the scene some five minutes after the last sighting of the person in the water.

The F27s attempted to direct PVF to the last known position of the person but no further sighting was made.

The pilot of PVF estimated the low cloud in the area at that stage to have been broken strato-cumulus, base about 2000 feet approaching the area, reducing to 1000-1500 feet at the position of the F27s. The light was not good and was fading rapidly. There were distant showers but none in the area itself.

NSC arrived at 1725, at which time FNO was forced to depart. Subsequent attempts by EWS to direct the helicopters to the position before he was forced to leave the area were also unsuccessful and the helicopters then established their own search pattern, track-crawling with two-minute legs, but nothing was sighted before they in turn had to depart for Newhaven about half an hour later.

2.8.2 Discussion

There was a limited time available for the rescue and the only real chance of success lay in the use of a winch-equipped helicopter before the light faded to the extent that continued visual contact with the person became impossible. No ships were capable of reaching the area before Last Light and contact was in fact lost at about the time of sunset, some 30 minutes before Last Light.

The most practical method of rescue in the circumstances was to winch a crewman down to assist the person in the water and to lift the two out together. The winch capacity required for this task ruled out single-engine helicopters with the exception of the Bell 205. Twin-engine helicopters also have priority for overwater operations, for safety reasons. The use of single-engine aircraft is only acceptable if no suitable twins are available.

Because of operational limitations, such as comparatively low speed and limited endurance in the search/rescue area, it is of primary importance that helicopters be available, when required, as close as practicable to the distress position.

In practice this means that an appropriate action may be to position rescue helicopters at a suitable forward base as soon as possible, on the condition that the RCC has a reliable indication of the likely ditching position, which was so in this case.

In summary, the requirement is for a twin-engine helicopter, winch-equipped or capable of being so fitted in a short time, preferably with rescue-experienced crew, at a suitable location or able to proceed to a suitable location in reasonable time, and with an acceptable response time from receipt of a request.

The only aircraft which satisfied these requirements at the time were:

- NSC at Latrobe Valley
- an S76 at Longford) (one crew immediately available)
- two Bell 212s at Longford)

The various other helicopters available can be discounted as first priority rescue craft on the grounds of unsuitable location, being single-engine, or not being winch-equipped. The possible exception was one of the Bell 205s at Longford. These, although single-engine, are equipped with floats and a suitable winch, and being on SAR standby for the oil drilling platforms, had a better response time than either the S76 or one of the B212s.

The situation at Longford on 17 July was unusual. Regular helicopter flights had been cancelled because of an industrial problem on the oil rigs, with the result that the S76, B212 and B205 helicopters were all on the ground, with one standby crew and maintenance personnel immediately available. The B205 was ready to go and the operator estimated that the S76 or B212 would have required 20 minutes to fit a winch.

The SARMC did not check the availability of the helicopters at Longford. He reported later that this decision was based on his view that the response time would have been too long, from his personal knowledge of the organisation gained in previous visits and discussions.

Appendix IV contains an analysis of possible rescue missions for a number of helicopters in the southern Victorian area, including those mentioned above, compared with the actual flights of NSC and PVF. Initial response times are based on operator assessments. Although there is no certainty that the projected missions would in practice have been flown as shown, it gives a useful comparison of alternative actions and indicates that timely use of one of the Longford helicopters might have resulted in successful rescue action.

The decision to not check the availability of rescue helicopters other than NSC and PVF is considered to have been an error of judgement.

The SARMC was by far the best informed of the Melbourne RCC personnel regarding the normal capabilities and likely response times of various organisations in the area. This seems to have proved a distinct disadvantage in this case, in that he depended on his knowledge and experience of the typical situation rather than checking on actual availability at the time.

It is possible that initially the SARMC may not have had a good appreciation of the relative distances from the ditching site to Longford, Latrobe Valley, Moorabbin and Essendon. One reason for this could be that the initial plotting was done on a Radio Navigation Chart (RNC) 1 and this was used for reference by the RCC during the early stages of the action. It is considered that additional reference to a topographical map such as the World Aeronautical Chart could have made the situation much clearer. The actual distances involved are tabulated at Appendix I.

There can be no argument with the selection of NSC as the primary rescue aircraft but sending it first to Moorabbin negated the advantage of its previous location relative to the

ditching position. It was airborne, about half-way to Moorabbin, when the survivor was sighted by FNO.

It appears that insufficient attention was paid to the handling of this critical helicopter in the early stages. Possible contributory factors were:

- There was a very high workload on the RCC, particularly with communications and the attempts to organise the supply-dropping aircraft.
- The RCC had probably not settled down at the time NSC was sent to Moorabbin, only 12 minutes after receipt of the Distress Phase and before a full appreciation of the rapidly developing situation had been gained.
- There was a breakdown in communications between the SARMC and the A/SARMC regarding the positioning of NSC.

At the time of the slick sighting by FNO there was probably still a chance to recover the situation. NSC was not yet half way to Moorabbin at this stage and further consideration by the A/SARMC of his initial doubts as to the wisdom of sending it there in the first place, or a timely enquiry by the SARMC as to its current position, could possibly have led to more effective deployment of this aircraft.

The sighting report may well have unsettled the RCC personnel because it came earlier than expected; planning to this point was being directed towards the 'conventional' marine SAR sequence — search (often of a long duration), support and rescue. With hindsight the response to the early sighting report should have been to discontinue or at least reduce the priority of the support activity, which was generating a very high workload on the RCC (and was unlikely to be successful at this stage anyway), and to put a maximum effort into rescue. It must be recognised, however, that this sudden change of priorities called for great flexibility and decisive action, and is believed to have had no precedent in Bass Strait SAR actions. Furthermore, the time frame was compressed by the impending Last Light.

2.9 COMMUNICATIONS

2.9.1 Air/ground

There were some problems with air/ground communications with the search aircraft which were forced to operate at low level out of direct VHF coverage on either ATC or Flight Service frequencies. As ATC has no High Frequency (HF) capability, communications would have had to be through Flight Service if HF had been used.

A decision was reached early in the action, by the SARMC and the Senior Area Approach Controller (SAAC), that ATC frequencies would be used, with high level aircraft providing relay. The reasons for this were that RPT passenger aircraft were involved and the SAR aircraft would be frequently leaving and re-entering controlled airspace above the search area.

Some congestion was experienced on the relay frequency and a 'chatter' frequency was introduced for use by aircraft in the search area.

This arrangement continued throughout the initial search action. Changing to HF communications would have eliminated the need for a relay aircraft but would have meant introducing Flight Service into the communication chain. ATC would have had to remain in the chain because of the controlled airspace responsibility, so there would have been little if any overall advantage. There may also have been problems with loss of communications during the change-over period. The arrangement adopted is considered to have been the best course of action in the circumstances.

2.9.2 Ship/shore

Marine radio facilities through the coastal radio stations were used for ship to shore communications and there were no significant problems.

2.9.3 Ship/aircraft

Marine frequencies were used for ship to aircraft communications and there were no significant problems.

2.9.4 RCC/outstations

Co-ordination between the RCC and Launceston ACC was carried out initially by the direct line. To avoid congestion on this line, which is primarily for operational control purposes, STD telephone facilities were subsequently used at the SOC position by the RCC personnel. One line was kept open for long periods to reduce delays. This had the effect of requiring one person to guard the Launceston end continuously, at a time of high workload in the ACC, as there is no loudspeaker facility available.

Communications between the RCC and Wynyard Flight Service were either relayed through Launceston ACC or made by STD telephone, as there is no direct line available.

2.9.5 General comments

A major component of the very high workload of the RCC and Launceston ACC was the sheer volume of communications involved in the total SAR action. This workload may have been reduced if direct air/ground VHF communications and a facility for monitoring all air/ground frequencies had been provided for the RCC. The facilities which were available were in accordance with the specified standards.

The Sequence of Events gives some idea of the magnitude of the communication task but only reference to the tape recordings and transcripts can give the full picture.

2.10 SAFETY

A major consideration in the conduct of any SAR action is the safety of all persons involved. This may result in the SARMC having to make difficult judgements as SAR operations of necessity may involve departures from normal operational safety standards.

In this case the main safety considerations that arose were in relation to:

- the acceptability of two F27s operating in close company at low level with passengers on board;
- whether an attempt should have been made to persuade the pilot of TZY to make an IFR departure from Launceston;
- the approval for the F27s to land at Melbourne with less than normal minimum fuel; and
- whether NSC and PVF should be used for night search on Day 1 of the SAR action.

As discussed earlier in the report, proper consideration was given to the use of the F27s at low level when the problem first arose. Further consideration was given as the situation developed and again the decision was made to accept the reduction in standards in the circumstances of the emergency. The options open to the SARMC were either to use the F27s or lose contact with the person in the water.

The SARMC rightly accepted without question the decision by the pilot of TZY not to make a second departure from Launceston under IFR conditions and brought no pressure to bear on him to reconsider his decision.

The weather at Melbourne was good and the reduced fuel was covered by giving the F27s traffic priority.

The use of NSC and PVF on the night search on Day 1 of the SAR action also appears to have been properly considered. One of the safety conditions required by the SARMC was that the two helicopters should act in company.

2.11 AIRCRAFT AVAILABILITY

The system developed by the Department of Aviation does not require aircraft to be kept

available specifically for SAR purposes but provides for immediate requisitioning from suitable sources when required by an RCC.

For an aircraft to be considered available for SAR action the following criteria need to be met:

- suitable aircraft type
- aircraft positioned at suitable location
- equipment/stores at suitable location
- flight crew available, including a Dropmaster in the case of supply dropping
- ground crew available if necessary for aircraft preparation.

Although the absence of a standby system means that aircraft availability is unpredictable, this was not a factor in the outcome of this SAR action because adequate aircraft, crews and stores were available.

3. Deficiencies

3.1 SYSTEM DEFICIENCIES

The following deficiencies were noted in the SAR system.

3.1.1 Supply dropping

The AOIs provide a list of aircraft types approved for supply dropping. Included in the list was 'Aero Commander'. This is intended to refer to twin-engine Aero Commanders but the information is misleading in that some models e.g. 680FL, 690, are unsuitable because of the forward location of the cabin door.

A similar problem existed with different models of the Piper PA31 concerning approval for supply dropping. Approval procedures for the PA31-350 model e.g. TZY, to be operated with the door removed were incomplete in that no Flight Manual supplement had been issued. Operation with the door removed therefore was technically unapproved.

Steps had been taken to approve the PA31-310 for IFR operation with doors removed but, due to an oversight, the full approval process had not been completed.

There were inconsistencies in door-off approval documentation for certain aircraft types between the Department of Aviation regional offices. There also appear to have been deficiencies in the system for the production, distribution and availability of documentation relating to supply dropping aircraft.

The droppable supply stores held by the Department of Aviation in Victoria were positioned at Melbourne Airport. In the event of a GA aircraft being required for supply dropping there would be a delay if the aircraft needed to be positioned at Melbourne.

All recent Dropmaster training in the Melbourne SRR had been conducted on F27 aircraft. In the event that a GA aircraft was required for supply dropping the situation could arise that the pilot had no experience in SAR operations, the Dropmaster was unfamiliar with supply dropping from the aircraft type and the ground crew were unfamiliar with preparing the aircraft for the supply dropping role.

3.1.2 OCC/RCC communication facilities

The Sequence of Events gives an indication of the activity in the OCC/RCC, but the amount of communications can only be fully appreciated by reference to the transcripts of communications. There were several factors which appear to have caused problems:

- Facilities are not provided for monitoring all air/ground frequencies at the SOC position. The resulting intercom traffic between the RCC personnel working from the SOC position and the AACC was extremely heavy. Only the efficient

performance of the AACC, and particularly the SAAC, made the system work as well as it did.

- The telephone facilities at the SOC desk apparently did not meet the peak load requirement during the early stages of this SAR action. The use of a telephone in an adjoining room may have contributed to a major breakdown in communications regarding the handling of NSC.
- It is not possible to obtain direct VHF communication between aircraft operating at low level over central Bass Strait and Melbourne airways operations units.

3.2 PERFORMANCE DEFICIENCIES

The following deficiencies were noted in the performance of personnel involved in the SAR activities.

The availability of resources at the time was not fully checked before selecting primary and back-up supply and rescue aircraft. This action should have disclosed the availability of the F27 at Melbourne and the helicopters at Longford.

The SARMC was slow to relate the SAR action to the Victorian coast rather than the Tasmanian north coast.

The SARMC persisted with the support effort after the sighting of the person in the water, instead of directing his primary attention to rescue action.

There were delays in alerting the Victoria Police, the RAAF and the ACSC.

Probable factors in these deficiencies were:

- The SARMC's extensive knowledge of the operators and resources in the Melbourne SRR and their past response times. This knowledge had been built up over a long period in his role as SAR Check Controller with the Melbourne RCC, and led him to rely on his experience rather than making a specific check.
- The fact that the initial notification came from Launceston Control, and the early position information referred to Launceston VOR and DME, which led to an initial assumption that it was going to be a Tasmanian-based SAR action.
- A breakdown in communications between the SARMC and the A/SARMC as a result of which the SARMC initially thought that NSC was in the air near Moorabbin at the time and that for it to land at Moorabbin and refuel would be an appropriate procedure.
- The initial plotting of the estimated ditching position by the RCC was done on a Radio Navigation Chart, which has little topographical detail, and the distances from the various helicopter bases were estimated rather than plotted. Additional reference to a topographical map would have made the situation clearer.
- The high initial workload resulting from the amount of communications which immediately developed and the many simultaneous tasks and critical decisions required, which led to difficulty in monitoring and checking RCC activities at the time. There also appears to have been a lack of feedback to the SARMC in some instances.
- Awareness in the RCC that light was going to be a problem in the search area and that a successful rescue would be unlikely after Last Light. This led to added stress on all personnel throughout the early stages of the SAR action.

4. Conclusions

4.1 The assistance given to the pilot prior to the ditching was adequate in consideration of the short time available.

4.2 The search phase was adequately conducted.

4.3 Fixing the position of the survivor was hampered by low cloud in the area, preventing the search aircraft from maintaining visual contact while obtaining a position using the available navigation aids. This factor did not contribute significantly to the overall outcome.

4.4 If prompt action had been taken to employ an F27 at Melbourne on supply dropping, the support action may have been successful.

4.5 The difficulty in providing a support aircraft from Launceston probably did not contribute to the final result.

4.6 No support aircraft reached the scene.

4.7 The organisation of rescue aircraft was critical to the successful outcome of the SAR action. There were two significant deficiencies in this area:

- the action of despatching the Bell 212 from Latrobe Valley to Moorabbin as a result of a breakdown in communications between the SARMC and the A/SARMC; and
- not despatching either a Bell 212 or the Sikorsky S76 from Longford to the search area because of an error of judgement by the SARMC.

4.8 The initial workload in the RCC was very high. This situation arose because of:

- the difficulties experienced in organising primary and back-up support aircraft;
- approach of Last Light; and
- deficiencies in the communications available in the OCC/RCC.

4.9 The decision to terminate the search was based on the impossibility of survival of the person in the water by that time and on the high probability of detection of a life raft, had one been deployed at the time of the accident.

4.10 The SAR system does not require aircraft to be kept on standby. Suitable resources were available at the time of this accident.

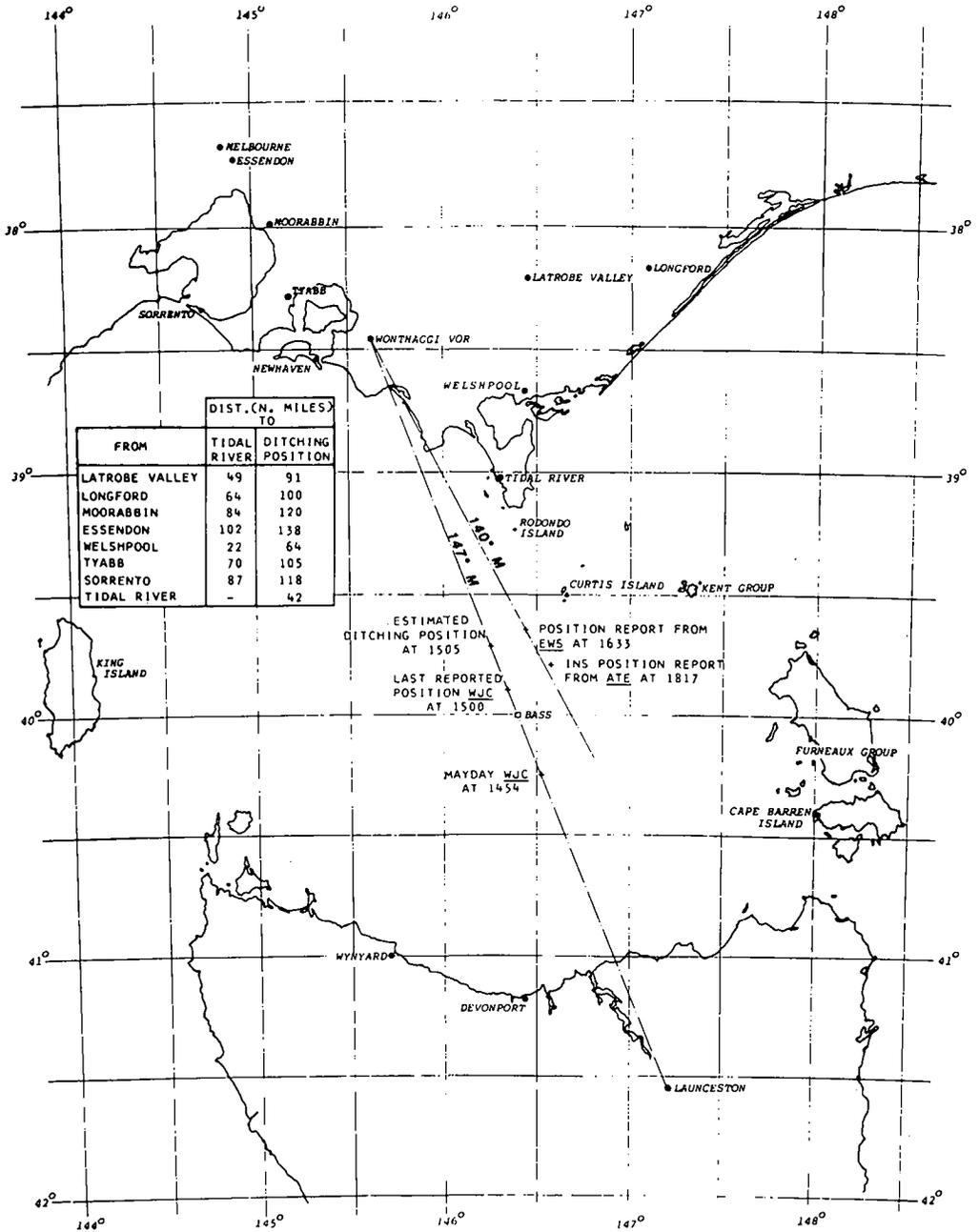
4.11 No evidence was found of any negligence, failure to accept responsibility or knowing lack of co-operation on the part of any person engaged in the SAR action. All personnel appear to have done their utmost to achieve success within the constraints of their knowledge, experience, ability and the facilities available.

4.12 The deficiencies in performance which occurred were the result of working under pressure.

4.13 The deficiencies in the system, particularly in relation to communications, the documentation of approved supply dropping aircraft, and the lack of training and experience in the preparation and use of General Aviation aircraft for supply dropping, added to the workload and pressure on the RCC team but otherwise did not directly affect the outcome of the SAR action.

4.14 Only one person was sighted in the water. Had the available resources been employed in a more effective manner, his rescue may have been successful.

APPENDIX I



APPENDIX II

Sequence of Events

Aircraft Involved

<i>Make/model</i>	<i>Registration</i>
Fokker F27-400	VH-FNO
Fokker F27-500	VH-EWS
Britten-Norman BN2A	VH-EQT
Aero Commander 680FL	VH-EXZ
Piper PA31-350	VH-TZY
Bell 212	VH-NSC
Fokker F28-1000	VH-ATE
Aerospatiale AS350B	VH-SES
Aero Commander 690A	VH-PCV
Aerospatiale AS365C	VH-PVF
Aerospatiale AS350B	VH-HBA
DouglasDC9	VH-TJQ
Fokker F27-400	VH-FNQ
Boeing 727-277	VH-RMV
Beech 200C	VH-AKV
Piper PA31-T2	VH-TNZ
Gulfstream 1000	VH-LTI
Lockheed P3	R251, R252, R253
Grumman S2	R847
Lockheed C130	R161
Boeing 737	VH-CZN

Sequence of Events

The main events relevant to the flight of VH-WJC, its ditching, and the subsequent search and rescue action are summarised below in time sequence. The times quoted are from a variety of sources. In some cases, other than transcripts of recorded communications, these sources gave conflicting information as to times of various events. In such cases estimates have been made on the best available evidence.

17 JULY 1983

<i>Time</i>	<i>Event</i>
1352	WJC departed Hobart
1427	WJC reported over Launceston, estimating Bass at 1502
1450	FNO departed Melbourne for Devonport
1452	WJC reported fuel problem
1454	WJC gave MAYDAY call and reported leaving FL120 on track to Bass, present position 85 DME Launceston, making a controlled ditching. (This position was approximately 60 nautical miles from the north coast of Tasmania, and 67 nautical miles from Devonport)
	Distress Phase declared by Launceston Control

- EWS departed Melbourne for Devonport
- 1455 Launceston Control offered WJC diversion to Devonport, and advised Melbourne Operational Control Centre (OCC) of the Distress Phase
- 1456 WJC reported remaining on track, making an emergency descent, and position 92 DME Launceston
- 1457 WJC requested advice on ditching
EQT, en route Launceston to Cape Barren Island, requested by Melbourne Rescue Coordination Centre (RCC) via Launceston Flight Service to divert to the position reported by WJC and attempt to establish communications. Launceston Flight Service requested to call WJC
- 1458 Melbourne RCC requested advice from Launceston Control on the availability of an Aero Commander for supply dropping
- 1459 Launceston Control advised RCC that EXZ was on the ground at Wynyard
WJC advised Launceston Control of intention to descend to 500 feet, position now 95 DME Wonthaggi
- 1500 WJC reported position as 94 DME Wonthaggi (last position report received from the aircraft)
Melbourne RCC requested via Launceston Control that EXZ return to Launceston to make the necessary preparations to drop support equipment in the event of a sighting being made by search aircraft
- 1501 WJC advised Launceston Control there were two persons on board (last transmission heard from the aircraft)
Melbourne RCC asked MelbourneArea Approach Control Centre (AACC) for the availability of escort aircraft
- 1504 Launceston Control transmitted to WJC ditching forecast provided by RCC. Melbourne RCC requested AACC to divert FNO to the search area
- 1505 Estimated ditching time based on last position report from WJC and estimated position of the slick found subsequently
- 1505 AACC requested FNO to call WJC on 119.7 MHz
- 1506 EQT diverted to Launceston to pick up dropping gear
- 1507 Launceston Tower advised RCC that TZY was available at Launceston
Melbourne RCC requested NSC to proceed from Latrobe Valley to Moorabbin, and asked AACC to divert ATE to the search area
- 1508 FNO diverted to the search area
- 1510 ATE diverted to the search area
- 1511 Launceston Flight Service confirmed that TZY was available at Launceston. RCC accepted TZY as the primary drop aircraft
- 1512 AACC requested FNO to ask WJC to squawk 7700 (transponder setting)
- 1513 Melbourne RCC advised by Launceston Flight Service that the estimated departure time Launceston for TZY was 1550
Melbourne RCC requested that SES proceed from Hobart to Launceston
- 1515 FNO and ATE had both called WJC with no response
RCC advised AACC that WJC was now presumed to have ditched
- 1520 FNO commenced to search southbound on the Wonthaggi 147 radial

- ATE in the general search area, commenced duty on communications relay
- 1521 Melbourne RCC arranged for AACC to maintain separation between aircraft in the search area
- 1523 FNO, EWS and ATE confirmed that they were monitoring ELB frequency 121.5 MHz
- 1531 ATE descended to commence search
- 1532 NSC departed Latrobe Valley for Moorabbin
- 1533 EWS was requested to orbit in its present position and act as relay
- 1534 Melbourne RCC advised Launceston Flight Service that EQT was no longer required, and requested that PCV depart Hobart for Launceston as soon as possible
- 1535 EXZ departed Wynyard for Launceston
- 1536 Melbourne RCC alerted the Victoria Police (D24)
- 1539 Melbourne RCC asked Hobart Briefing Office if the WJC flight plan showed a life raft. The answer was negative, the flight plan only showed a beacon, first aid and life jackets
- 1540 FNO reported northbound at 500 feet on the Wonthaggi 147 radial at 100 DME (FNO using dead reckoning navigation at this time)
- 1541 Melbourne AACC requested CZN, en route Melbourne to Hobart, to listen out on the ELB frequency
- 1544 Melbourne RCC requested PVF to standby
- 1545 FNO reported sighting a slick in the water, unable to fix position by navigation aids because of low altitude
- 1549 Melbourne RCC advised Launceston Control that TZY was now the primary drop aircraft, second priority was PCV and standby was EXZ
- 1551 Melbourne RCC notified ACSC and requested advice of shipping in the area
- FNO reported that the slick appeared to be on the Wonthaggi 147 radial, with Rodondo Island bearing 030. (The island was later established to be Curtis Island)
- 1553 FNO reported sighting a person in a life jacket. The person was waving to the aircraft at that time
- Melbourne RCC requested AACC to arrange for INS- equipped aircraft to get an accurate position
- 1554 Melbourne RCC requested PVF to depart Essendon as soon as possible for the search area
- EWS requested to track to the position reported by FNO, on descent to 1000 feet (later amended to 5000 feet)
- 1559 ATE was requested to attempt to fix FNO's position by INS
- 1602 EXZ landed at Launceston
- 1604 TJQ, en route Melbourne to Hobart, was requested to act as communications relay
- 1605 PVF departed Essendon for the search area
- Melbourne RCC was advised that HBA, another AS350 helicopter

replacing SES, was estimating departure Hobart at 1620. RCC advised that the aircraft was no longer required

EWS was requested to attempt to locate FNO and circle above him at 5000 feet (no sighting of FNO was achieved until EWS later descended below the cloud layer)

1606 PCV departed Hobart for Launceston

1608 ATE advised that the best position determined so far was approximately on the Wonthaggi 147 radial at 80 DME, unable to sight FNO because of the low cloud cover

1609 ATE departed the search area for Launceston

1612 Melbourne RCC advised ACSC that the ditching position was on the Wonthaggi 147 radial, 80 miles from Wonthaggi

1614 ACSC advised RCC that Lysaght Endeavour was the closest vessel, some 20 nautical miles to the north. RCC requested that the vessel proceed to the search area

1615 In response to an enquiry from RCC, Launceston Control advised that TZY was estimating departure Launceston in about 5 minutes

NSC arrived at Moorabbin

1616 TJQ departed the area for Hobart

EWS was southbound on descent to below cloud level. FNO descended to 300 feet

1618 FNQ, en route Melbourne to Wynyard, was acting as communications relay in the area

1619 PVF advised Melbourne Flight Service estimating the search area at 1722, and would have only 35 minutes in the area

1620 Melbourne RCC requested RAAF for availability of aircraft with drop capability

1622 118.2 MHz was allocated as chatter frequency for aircraft in the search area

1628 NSC departed Moorabbin for the search area

1630 NSCA advised RCC that helicopter fuel was positioned at Newhaven

RAAF advised RCC that HS748 aircraft were available, but they had no dropping capabilities and could not reach the search area before Last Light

TZY departed Launceston for the search area

1630 Approximate time that FNO last saw movement by the person in the water

1631 EWS was below cloud level and had sighted FNO

ATE landed at Launceston

PCV landed at Launceston

1633 TZY requested clearance from Launceston Tower to return to Launceston because of weather

1633 EWS arrived at the position of FNO, and reported the position as Wonthaggi 140 radial 81 DME (this DME position was based on the last positive DME fix by EWS and subsequent timing of his approach to FNO)

1636 Launceston Tower advised RCC that TZY was returning to Launceston

FNO advised he could remain on station for another 30 minutes, the light

was fading, the oil slick breaking up, and it was becoming difficult to remain visual with the person in the water

1638 PVF reported outbound on the Wonthaggi 140 radial

1639 Lysaght Endeavour advised ACSC he was proceeding to the search area, estimating arrival at 1815

1640 PVF advised estimating 81 DME Wonthaggi at 1715
 TZY landed at Launceston
 PCV departed Launceston for the search area

1641 NSC was requested to proceed on the Wonthaggi 140 radial to 81 DME

1644 FNO and EWS both at 500 feet in the search area and maintaining visual separation
 EWS sighted the person in the water. (It was later reported that he was moving his arms around)

1646 NSC reported his position at Wonthaggi, estimating 81 DME at 1730

1654 RCC advised the pilot of TZY of the availability of a dispensation covering IFR operation with door- off, requested he should consider proceeding IFR, and left the decision to the pilot

1655 Temporary Restricted Area declared 20 nautical miles radius, centred on 3939S 14628E, 0-3000 feet

1659 TZY was stood down by RCC

1705 PCV arrived in the search area
 FNO advised that he could remain on station until 1722, then return to Melbourne, provided the traffic-holding fuel requirement was waived. FNO was advised that this was approved and he would have priority

1707 Approximate time the person in the water was last sighted by EWS. (At this time no movement was seen and it was reported that the person was probably unconscious)

1709 EWS advised that his latest divert time to Melbourne without traffic-holding fuel would be 1734

1710 ATE departed Launceston to return to the search area
 Temporary Restricted Area was amended to 0-10000 feet, to the base of controlled airspace

1713 Approximate time the person in the water was last sighted by FNO. (It was reported that he had not appeared to be moving for 'some time')

1715 FNO reported he could remain in the area for another five minutes, and had PVF in sight
 PVF reported having FNO and EWS in sight, descending to 300 feet

1718 Approximate time that PVF joined FNO and EWS

1723 ATE arrived in the area

1725 FNO departed the search area for Melbourne, reported that the light was fading very rapidly and neither aircraft could make a sighting of the person in the water
 NSC joined EWS and PVF

1727 ATE acting as relay aircraft

1732 FNQ departed the area for Wynyard

1736 EWS departed the search area for Melbourne

1740 Last Light

1750 NSC and PVF advised that they would have to leave the area at 1800 for Newhaven

1751 PCV descended to low level in the search area in an attempt to sight the helicopters before they departed

1753 ATE was advised that Lysaght Endeavour was in the general area and was requested to establish HF communications

1755 ATE was requested to attempt to establish an INS position before the helicopters left the area
SAR activities transferred from the OCC to the adjacent RCC room
RMV, en route Launceston to Melbourne, was requested to hold at Wonthaggi to act as relay aircraft

1800 NSC departed the search area for Newhaven

1805 ATE reported he did not have the helicopters in sight but was in radio contact
PVF departed the search area for Newhaven

1811 FNO landed at Melbourne

1813 PCV reported that he had sighted both helicopters before they left the area

1817 ATE advised RCC and Lysaght Endeavour of an INS position 3947.7S 14633.9E based on his sighting of PCV (this is approximately Wonthaggi 140 radial 91 DME)
Lysaght Endeavour on scene, HF communications had been established with ATE

1818 EWS landed at Melbourne

1823 ATE on climb out of the search area

1825 RMV departed the area for Melbourne

1839 RMV landed at Melbourne
PCV departed the search area for Launceston

1840 ATE departed the area for Essendon

1900 NSC landed at Newhaven

1904 PVF landed at Newhaven

1907 Merchant Vessel Conus advised ACSC of his availability for search
ATE landed at Essendon

1910 PCV landed at Launceston

1958 NSC and PVF were requested by RCC to carry out a night search

2003 ACSC arranged for a general broadcast to shipping requesting assistance in the search

2010 RAN ordered HMAS Wollongong to assist
NSC and PVF started engines at Newhaven but shut down because of an unserviceability on NSC

2013 Victoria Police (D24) advised RCC that a life raft had been carried in WJC

(this information had been obtained from the wife of the pilot by Tasmania Police)

- 2054 RCC requested ACSC to contact fishing vessels believed to be in the general area and establish their availability for assistance
- 2100 Conus arrived in the search area
- 2105 Melbourne Radio (Marine) attempted to contact the fishing fleet leader Salaki without success
- 2115 ACSC requested Macedon and Empress of Australia to track through the area and maintain a special lookout for a person in the water
- 2117 NSC advised he was now available and estimating departure Newhaven at 2125, nil HF communications
- 2128 RCC requested AKV, on the ground at Latrobe Valley, to proceed to the area and assist with communications
- 2132 NSC and PVF departed Newhaven for the search area
- 2146 RCC requested SAR Central to arrange for military aircraft for visual search the next day
- 2148 NSC advised RCC that radio contact had been established with Lysaght Endeavour and Melbourne Radio (Marine)
- 2150 RCC requested ACSC to calculate search areas as confirmation of their calculations
- 2204 ACSC provided two datums and search areas, one for a person in the water and one for a life raft
- 2206 ACSC advised RCC of a possible debris sighting by a ship in the area
- 2224 AKV departed Latrobe Valley for the search area to assist with communication and navigation
- RAAF advised RCC that two Orion aircraft would be available on search at 0800 next day
- 2231 NSC and PVF arrived in the search area and were awaiting communications with AKV before descending to search
- Brisbane Trader had altered course to pass through the search area
- 2235 NSC and PVF were on descent in the search area and in radio contact with AKV
- 2315 RAN advised RCC that a Tracker aircraft would be available for search next day
- 2319 NSC located the previously reported debris with Forward Looking Infra Red. PVF was unable to locate with NITESUN
- 2321 ACSC advised that HMAS Wollongong would become the on-scene commander on its arrival, estimated to be 0130
- 2325 NSC and PVF departed the search area for Newhaven
- 2332 AKV departed the search area for Newhaven
- 2342 RCC advised ACSC that the aircraft night search had been terminated
- 2345 RAN ordered HMAS Bayonet to assist

18 JULY 1983

- 0003 AKV landed at Newhaven

0023 NSC and PVF landed at Newhaven
0030 Empress of Australia arrived on scene
0118 HMAS Wollongong arrived on scene

During the remaining hours of darkness HMAS Wollongong co-ordinated the surface search by a number of vessels, Lysaght Endeavour, Conus, Empress of Australia, Macedon and Brisbane Trader.

At 0750 a Temporary Restricted Area was declared, 40 nautical miles radius 3950S 14650E, 0-3000 feet. An RAAF P3 aircraft, R251, had commenced the air search. Other aircraft used during the day comprised an RAAF P3, R252, an RAN Tracker R847, a Department of Aviation G1000 LTI, PA31-T TNZ, together with AKV and NSC. There were several sighting reports of possible debris but on further investigation none of them proved to be relevant to the search.

Vessels engaged on the surface search at various times during daylight were HMAS Wollongong, which remained on scene until 1900 hours as Co-ordinator Surface Search, HMAS Bayonet, Brisbane Trader and Goliath, another merchant vessel. In addition, several other ships tracked through the area but no significant sightings were reported. After 1900 hours there were no dedicated vessels searching the area but the broadcast to shipping was maintained, with transiting vessels requested to keep a special lookout for wreckage or persons in the area.

19 JULY 1983

The air search commenced at 0800 and continued until 1645. Aircraft utilised were another RAAF P3 R253 and C-130 R161, together with the previously-used R847, AKV, LTI and NSC, the latter searching nearby islands including the Kent and Furneaux groups. No surface vessels were directly involved but several ships transitted the area with no sightings reported.

At 1900 on 19 July the air search was terminated and the Distress Phase on WJC was cancelled. ACSC advised all surface search authorities of the search termination and cancelled the broadcast to shipping.

SAR ACTIVITY

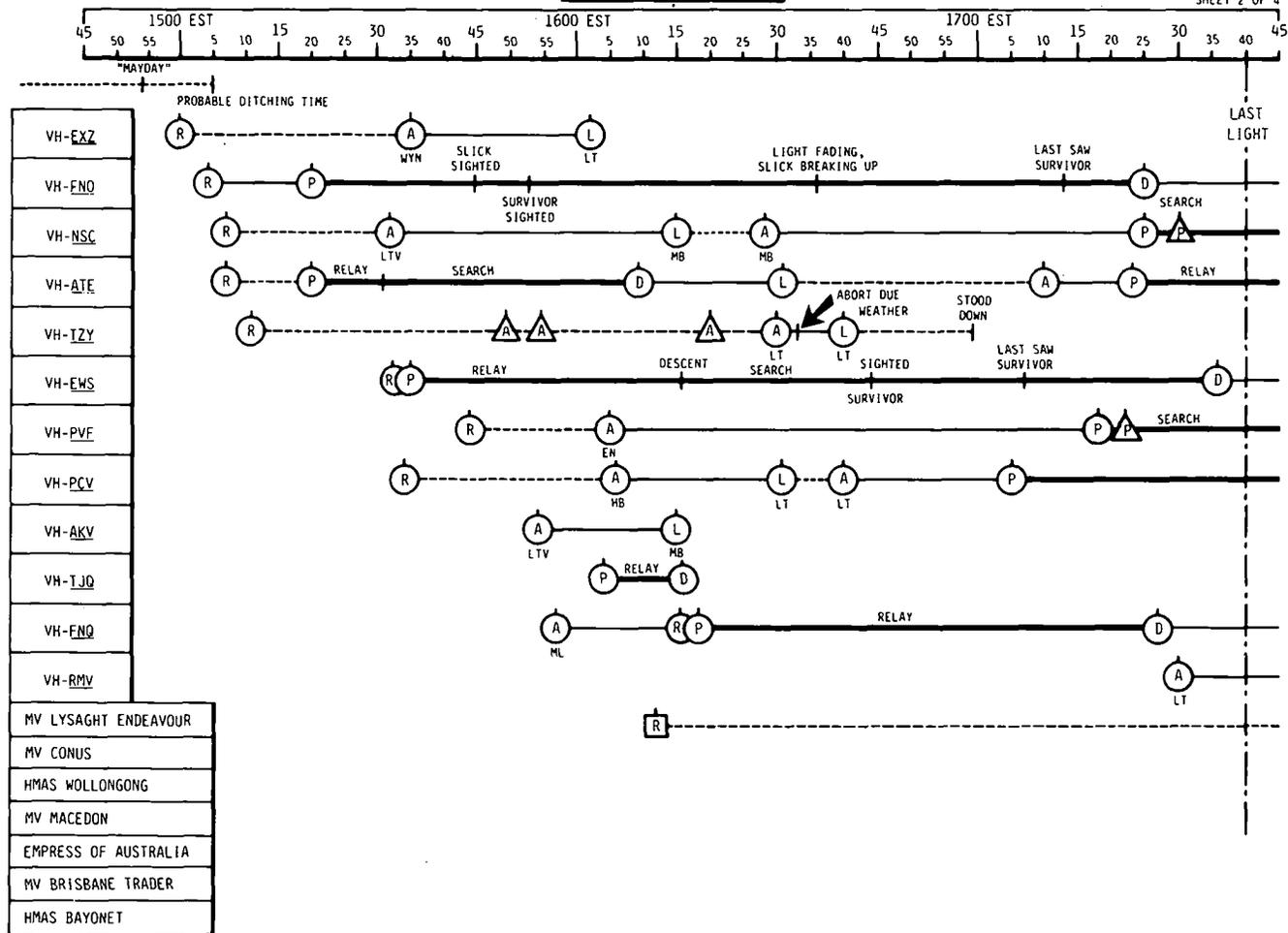
APPENDIX III

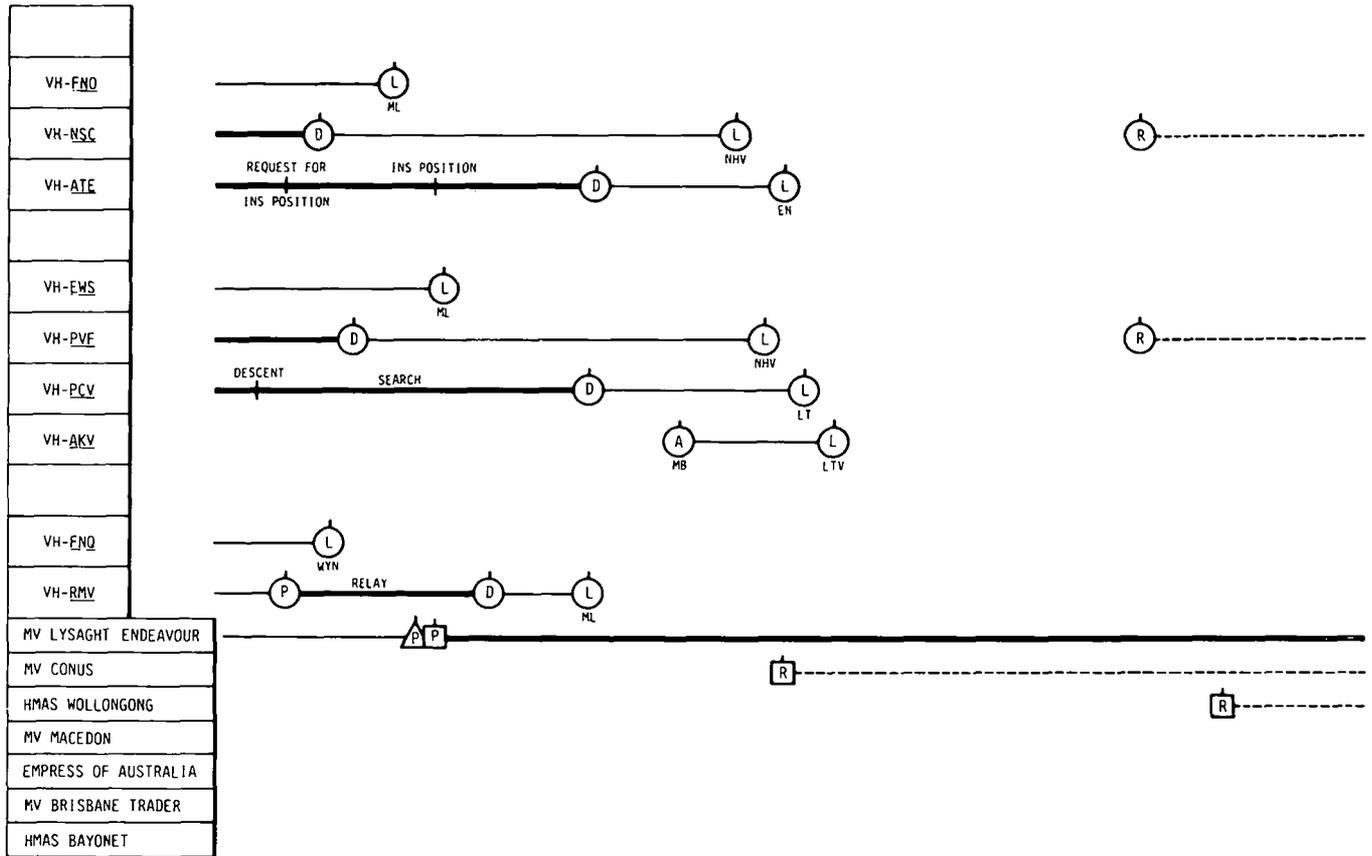
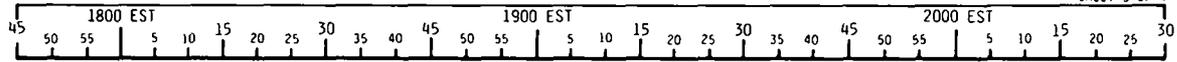
LEGEND

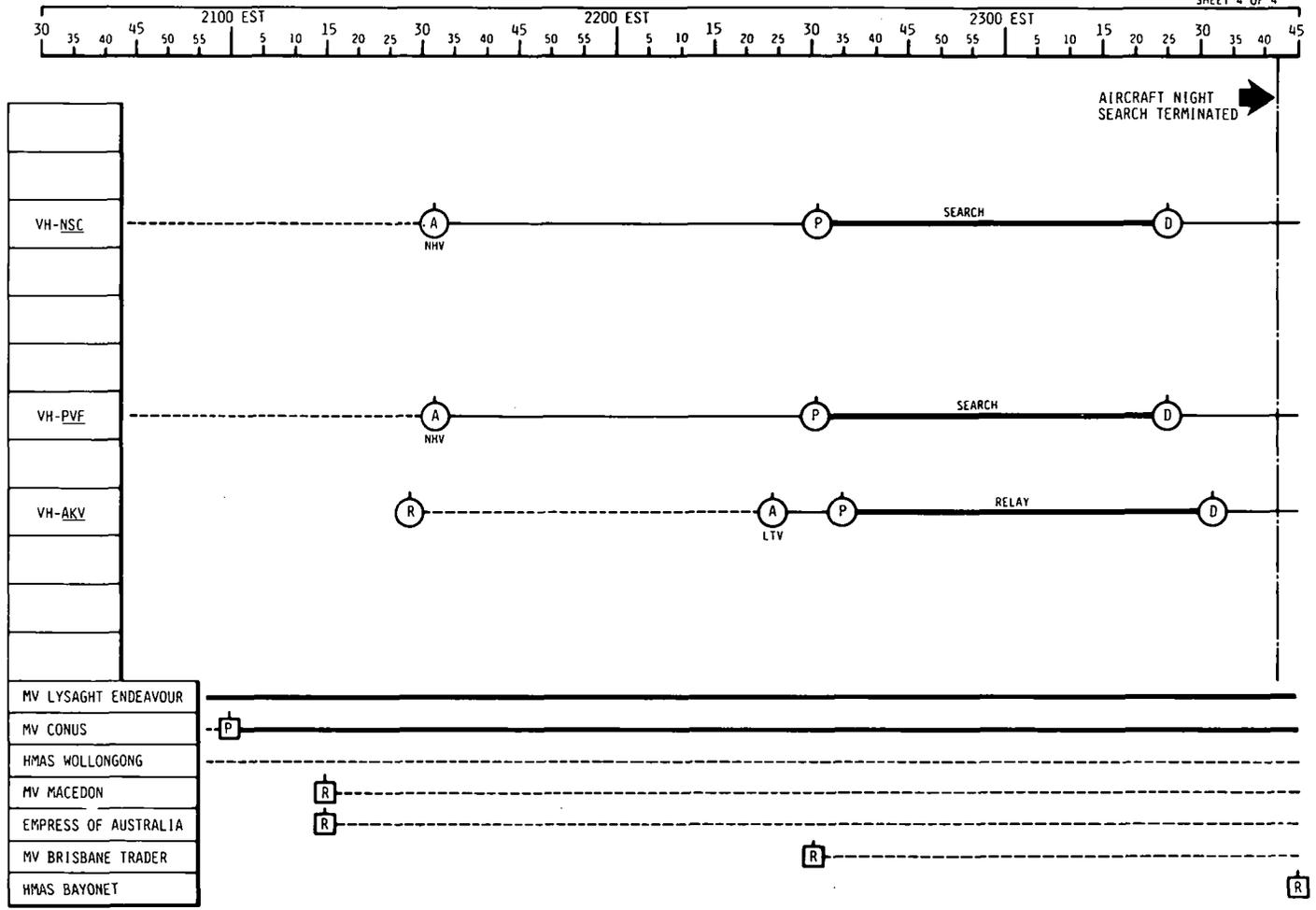
- REQUESTED OR ON STANDBY
- ENROUTE TO OR FROM AREA
- OPERATING IN AREA
- △ A PLANNED AIRBORNE TIME
- △ P PLANNED ARRIVAL TIME IN AREA
- R TIME REQUESTED
- A AIRBORNE TIME
- P TIME OF ARRIVAL IN POSITION
- D DEPARTED AREA
- L LANDED
- R SHIP REQUESTED
- P SHIP ARRIVAL IN AREA
- +— EVENT MARKER, SEE NOTE NEAR MARKER

- ML MELBOURNE
- EN ESSENDON
- MB MOORABBIN
- LT LAUNCESTON
- HB HOBART
- LTV LATROBE VALLEY
- NHV NEWHAVEN
- WYN WYNYARD

SAR ACTIVITY 17 JULY 1983

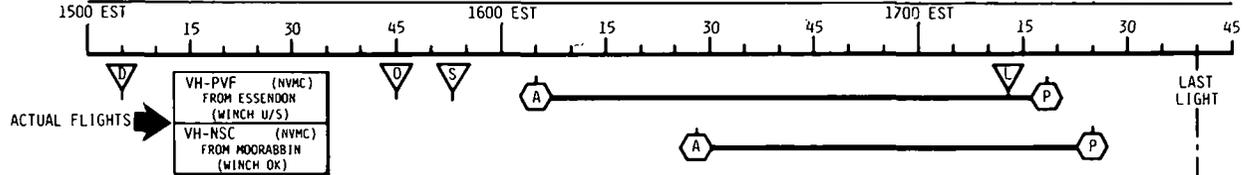
APPENDIX III
SHEET 2 OF 4





ESTIMATED MISSION TIMING-HELICOPTERS-TO ARRIVE TEN MINUTES BEFORE PERSON LAST SIGHTED

APPENDIX IV
SHEET 1 OF 2



AIRCRAFT AVAILABLE
FROM LATROBE VALLEY

VH-NSC (NVMC)
NAT. SAFETY COUNCIL
(WINCH OK)



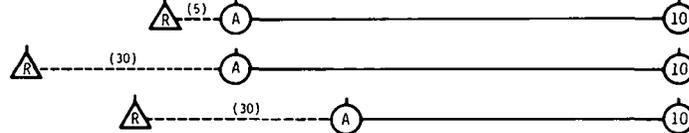
FROM LONGFORD

BELL 205 (VFR, S/E)
ESSO SAR
(WINCH OK)

BELL 212 (IFR)
ESSO
(WINCH 20 MIN TO FIT)

SIK S76 (IFR)
ESSO
(WINCH 20 MIN TO FIT)

SINGLE
ENGINE



FROM WELSHPOOL

BELL 212 (IFR)
COMMERCIAL AVIATION
(NO WINCH)

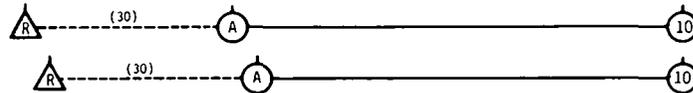
NOTE: OPERATORS' ESTIMATED RESPONSE TIMES HAVE
ADDED FACTORS VARYING BETWEEN 0 AND
10 MINUTES DEPENDING ON LENGTH OF QUOTED
RESPONSE TIMES. OPERATORS' ESTIMATES IN ()



FROM ESSENDON

VH-PVF (NVMC)
POLICE AIR WING
(WINCH U/S)

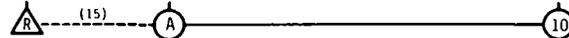
SIK S76 (IFR)
OKANAGAN
(NO WINCH)



FROM TYABB

BELL 206 (NVMC)
VOWELL AIR SERV.
(NO WINCH)

SINGLE
ENGINE



FROM SORRENTO

BELL 206 (NVMC)
STH. PENINSULA RESC.
(WINCH OK)

SINGLE
ENGINE



LEGEND

- ▽ D PROBABLE DITCHING TIME
- ▽ S SLICK SIGHTED
- ▽ S PERSON SIGHTED
- ▽ V PERSON LAST SIGHTED
- A ACTUAL AIRBORNE TIME
- P ACTUAL TIME IN AREA
- P ETA IN AREA
- △ R ESTIMATED LATEST REQUEST TIME
- A ESTIMATED LATEST AIRBORNE TIME
- 10 10 MINUTES BEFORE PERSON LAST SIGHTED

ESTIMATED MISSION TIMING-HELICOPTERS-FORWARD BASE TIDAL RIVER

APPENDIX IV
SHEET 2 OF 2

